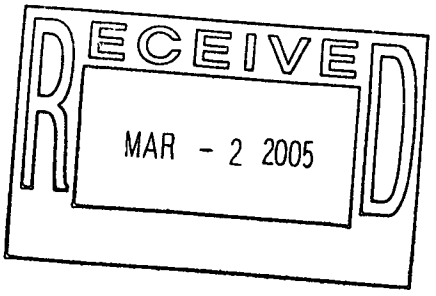
Rocky Flats Environmental Technology Site

Building 776/777 2nd Floor

Final Survey Report



Survey Units:
776031

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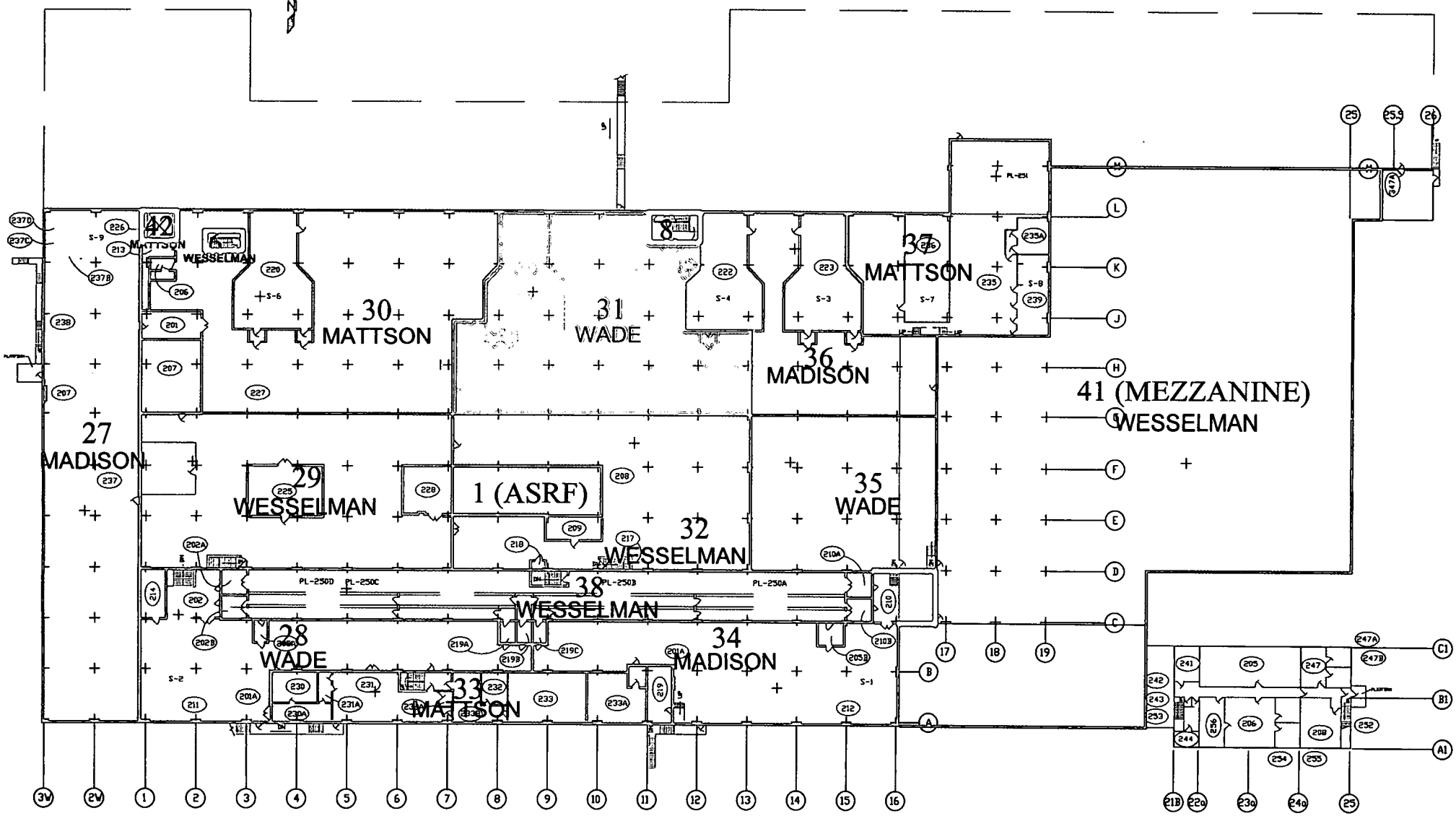
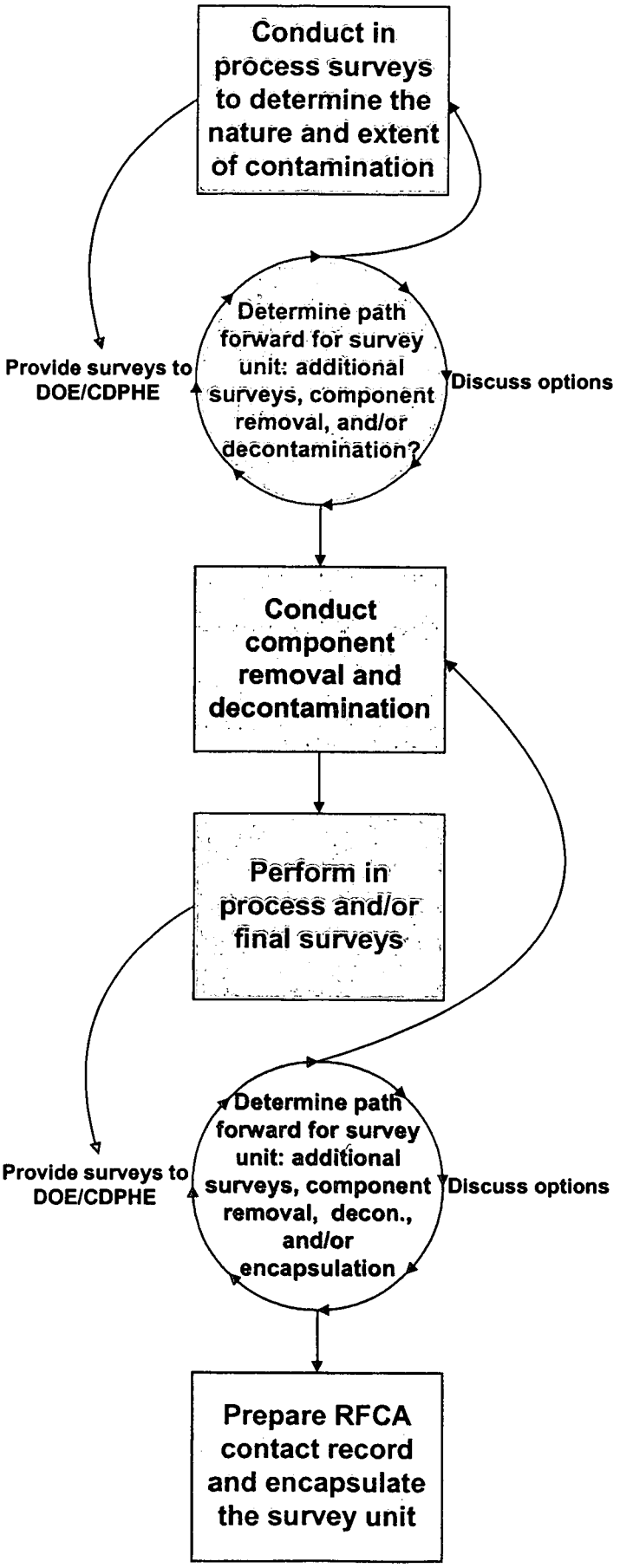
B776/777 INITIAL SURVEY UNITS
2nd FLOOR




Conduct in process surveys to determine the nature and extent of contamination
Determine path forward for survey unit: additional surveys, component removal, and/or decontamination?
Provide surveys to DOE/CDPHE
Discuss options
Conduct component removal and decontamination
Perform in process and/or final surveys
Determine path forward for survey unit: additional surveys, component removal, decon., and/or encapsulation
Provide surveys to DOE/CDPHE
Discuss options
Prepare RFCA contact record and encapsulate the survey unit

Survey Instructions
Building 776 2nd Floor
Survey Unit 776031

Purpose:

This instruction provides guidance for collecting gross gamma and removable contamination data to quantify the amount of residual contamination in Survey Unit 776031 prior to demolition. NaI measurements are performed in accordance with " INS-535-Ludlum2350-1 with Sodium Iodide Detector".

Equipment and materials:

1. A Ludlum 44-17 attached to a Ludlum 2350-1 set to collect five-minute counts that will be displayed on its LCD window.
2. A Bicron G-5 attached to a Ludlum 2350-1 set to collect five-minute counts that will be displayed on its LCD window.
3. One Electra with attached DP-6, calibrated and daily response checked.
4. Two probe holders, one for the G-5 and one for the 44-17 with tin shielding.
5. Calibrated and daily response checked SAC-4.
6. Measuring tape or laser range finder.

Note: The NE Electra with DP-6 probe and the Eberline SAC-4 shall be used in accordance with RSP- 7.01 and 7.02

Procedure:

1. Inspect instrument for obvious damage and ensure battery voltage is equal to or greater than 4.6 volts. If battery voltage is less than 4.6 volts change the batteries.
2. Complete daily performance checks for Sodium Iodide detectors to ensure the instrument is functioning properly by using Americium-241 source TS-912. Record results on Sodium Iodide Data Sheet.
3. For floor and concrete wall background measurements, perform a 300-second background count with a Bicron G-5 for floors or Ludlum 44-17 for walls at background location in room 201-A near column B-13. Record background counts next to "Bkg Floor" or "Bkg Concrete Wall"in background column of attached "Sodium Iodide Data Collection" sheets as needed.
4. For block wall background measurements, perform a 300-second background count with a Ludlum 44-17 at the background location in room 219. Record background counts next to "Bkg Block Wall" in background column of attached Sodium Iodide data collection sheets as needed.
5. For ceiling and metal floor background measurements, perform a 300-second background count with a Ludlum 44-17 or Bicron G-5 at background location in room 201-A near column B-13. Hold the probe waist high, pointed toward ceiling using a sheet metal plate in front of the detector (take background measurement in this configuration). Record background counts next to "Bkg Metal Floor" for the G-5 and " Bkg Metal Ceiling" for the 44-17 on the attached Sodium Iodide data collection sheets as needed.
6. Mark the sample locations on the surfaces to be measured. Take all measurements on contact with the marked surface using tin side shields on the Bicron G-5 and tin side and back shields on the Ludlum 44-17. All Sodium Iodide readings shall have 300 second count times.
7. Collect sodium Iodide, total surface activity and removable surface activity measurements at all locations marked on the attached map.
8. Record the NaI and NE Electra measurements on the attached sheet. Note any items or conditions that may have affected the measurement in the "remarks" section.
9. Count swipes for 60 seconds with a SAC-4, record result on attached sheet for removable contamination.

Survey Instructions
Building 776 2nd Floor
Survey Unit 776031

Table 776031-1: Survey Requirements				
Surface	**Type of Survey**	**Probe**	**Placement**	**Count Time**
Floor	Total Alpha Activity	Bicron G-5	On contact	300 seconds
All Surfaces	Total Alpha Activity	Electra with DP-6	On contact	60 seconds
Block walls	Total Alpha Activity	Bicron G-5 or Ludlum 44-17	On contact	300 seconds
All Surfaces	Removable Alpha	SAC-4	Swipe in placed in tray	60 seconds
Ceiling	Total Alpha Activity	Ludlum 44-17	On Contact	300 seconds
Block Walls	Background measurement	Bicron G-5 or Ludlum 44-17	On contact with wall in room 219	300 seconds
Metal Floors	Background measurement	Bicron G-5 or Ludlum 44-17	Probe waist high, pointed toward ceiling with sheet metal plate on end in room 201-A near column B-13	300 seconds
Floors and cement walls	Background measurement	Bicron G-5 or Ludlum 44-17	On contact with floor in room 201-A near column B-13	300 seconds
Metal ceilings	Background measurement	Ludlum 44-17	Probe waist high, pointed toward ceiling with sheet metal plate on end in room 201 near column B-13	300 seconds

FINAL SURVEY REPORT
Survey Unit 776031

1) Introduction and Scope

A pre-demolition radiological survey (PDS) is performed prior to building demolition to define the radiological conditions of a facility. A PDS survey for survey unit 776031 has been completed in accordance with guidelines outlined in the "Radiological Pre-Demolition Survey Plan Building 776/777". Based on the results it is recommended that no further remediation is needed, and that the survey unit may be encapsulated in preparation for demolition. Isolation controls shall be put in place to prevent recontamination of the area. This report has been prepared in accordance with sections 3 and 8 of the "Radiological Pre-Demolition Survey Plan Building 776/777".

Survey unit 776031 includes the north portion of room 208, north of G column line and between column lines 7 and 13 of Building 776. This area also includes plenum S-5 (room 221).

2) PDS Methods and Techniques

The PDS survey results determine the Average Surface Contamination Value ($ASCV_u$) and source term for the survey unit. These parameters are used determine whether the building may be demolished within the limits outlined in the "Radiological Pre-Demolition Survey Plan Building 776/777".

To obtain a statistically powerful number of data points, a minimum of 30 survey points were selected per survey unit. A random start, systematic grid method was used to identify the survey point locations. Three types of surveys are performed at each survey point as follows:

a) Painted surfaces are evaluated for potential contamination under coatings using sodium iodide (NaI) gamma detectors attached to a single channel analyzer windowed for the 59 keV gamma-ray (Am^{241}).
b) Direct alpha surface contamination measurements are performed using a NE Electra survey instrument with attached DP-6 probe. This data may be compared to the NaI survey data to show the fraction of contamination that is directly on the surface verses imbedded in the material matrix.
c) Removable surface alpha contamination surveys were performed by swiping the survey point with a 47mm filter paper then counting the filter paper on a SAC-4 alpha counter. This data may be used to gauge the effectiveness of encapsulation following the PDS.

To conservatively determine the final Average Surface Contamination Value ($ASCV_u$) for the survey unit, the source term associated with inaccessible areas of the survey unit (as described in section 4 of this report) is added to the source term calculated by the PDS survey.

3) ALARA Post Remediation Surveys

In addition to the PDS used to determine the Average Surface Contamination Value ($ASCV_u$) and source term for the survey unit, surveys were taken to determine the effectiveness of remediation efforts. Remediation is performed to demonstrate a reasonable best effort is made to maintain releases to the environment and doses to the workers ALARA. Remediation may include decontamination, or removal of parts of the structure such as block wall removal.

a) Floors

The floors of survey unit 776031 consist of epoxy covered concrete. In-process measurements collected on the floor of 776031 show that the majority of the floor had elevated activity. The entire floor surface of the unit was remediated by shaving before being re-surveyed. Grids 31-14 and 31-15 are inaccessible due to the presence of plenum S-5 filter racks. Remediation of the elevated floor areas resulted in a decontamination factor (DF) of 7.19, or a source term reduction of 86%.

Table 1:
Floor Remediation Results

	Pre-Remediation (In-process)	Post-Remediation (Follow-up)
Maximum (dpm/100cm^2)	4,147,762	778,916
Minimum (dpm/100cm^2)	12,817	6,902
Average (dpm/100cm^2)	870,432	121,011
Average (μCi/m^2)	39.20	5.45
Source Term (μCi)	27,838.13	3,870.17

b) Walls

Survey measurements on the walls of survey unit 776031 were taken on an established 3 foot by 3 foot grid on each of the 32 wall sections within the unit. No wall sections were found to have average contamination values above 100,000 dpm/100cm^2, therefore no remediation was performed on the walls of survey unit 776031.

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Table 2
B776/777 Survey Unit 776031 - Wall Summary

Wall	Section	Structural	Value	Initial Characterization			Follow-up Characterization		
				Type I	Type II	Type III	Type I	Type II	Type III
776031-1	A	X	19,051						
776031-1	B	X	33,710						
776031-2	A		26,845						
776031-3	A		42,242						
776031-4	A		37,141						
776031-5	A		52,233						
776031-6	A		44,377						
776031-7	A		45,758						
776031-8	A		44,313						
776031-9	A	X	15,100						
776031-11	A		4,600						
776031-12	A		35,227						
776031-13	A		19,027						
776031-14	A		31,364						
776031-16	A		17,867						
776031-17	A		23,750						
776031-17	B		21,921						
776031-18	A		36,960						
776031-18	B		34,562						
776031-19	A		32,941						
776031-20	A		40,819						
776031-21	A		49,764						
776031-22	A		42,237						
776031-23	A		58,964						
776031-24	A		84,892						
776031-25	A		18,521						
776031-26	A		14,532						
776031-30	A		17,355						
776031-31	A		23,758						
776031-32	A		20,346						
776031-32	B		22,787						
776031-33	A		54,364						
776031-35	A		36,382						

	Type 1: <100,000 dpm/100 cm2
	Type 2: >100,000 dpm/100 cm2 to <1,000,000 dpm/100 cm2
	Type 3: >1,000,000 dpm/100 cm2

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Table 3
B776/777 Survey Unit 776031- Wall Source Term

Wall Designation	Wall Section	Wall Type	Area (m.sq)	Average (dpm/100 cm^2)	Total Activity (uCi)	Comments
776031-1	A	I	26.988	19,051	23.16	
776031-1	B	I	23.737	33,710	36.04	
776031-2	A	I	13.433	26,845	16.24	
776031-3	A	I	13.828	42,242	26.31	
776031-4	A	I	15.357	37,141	25.69	
776031-5	A	I	6.785	52,233	15.96	
776031-6	A	I	27.703	44,377	55.38	
776031-7	A	I	26.217	45,758	54.04	
776031-8	A	I	11.288	44,313	22.53	
776031-9	A	I	30.371	15,100	20.66	
776031-11	A	I	7.408	4,600	1.54	
776031-12	A	I	23.412	35,227	37.15	
776031-13	A	I	5.03	19,027	4.31	
776031-14	A	I	3.924	31,364	5.54	
776031-16	A	I	27.317	17,867	21.98	
776031-17	A	I	26.988	23,750	28.87	
776031-17	B	I	28.939	21,921	28.58	
776031-18	A	I	28.939	36,960	48.18	
776031-18	B	I	26.988	34,562	42.02	
776031-19	A	I	24.155	32,941	35.84	
776031-20	A	I	24.155	40,819	44.41	
776031-21	A	I	4.183	49,764	9.38	
776031-22	A	I	5.016	42,237	9.54	
776031-23	A	I	4.183	58,964	11.11	
776031-24	A	I	5.016	84,892	19.18	
776031-25	A	I	26.217	18,521	21.87	
776031-26	A	I	11.288	14,532	7.39	
776031-30	A	I	11.288	17,355	8.82	
776031-31	A	I	26.217	23,758	28.06	
776031-32	A	I	22.582	20,346	20.70	
776031-32	B	I	18.414	22,787	18.90	
776031-33	A	I	4.16	54,364	10.19	
776031-35	A	I	4.16	36,382	6.82	
Totals			**565.69**	**33,446**	**766.40**	

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Table 4:
Wall Remediation Results

	Pre-Remediation (In-process)	Post-Remediation
Maximum (dpm/100cm^2)	84,891.77	84,891.77
Minimum (dpm/100cm^2)	4,600.05	4,600.05
Average (dpm/100cm^2)	33,445.79	33,445.79
Average (μCi/m^2)	1.51	1.51
Source Term (μCi)	1,128.42	1,128.42

c) Ceilings

No ceiling survey points were determined to require remediation during the in-process characterization of survey unit 776031. Survey points 31-95 and 31-96 are inaccessible due to the presence of immovable building cooling equipment. Survey points 31-115, 31-137 through 31-140, 31-157, 31-158 and 31-162 are located on ceiling panels that have been removed so no data is reported for these locations.

Table 5:
Ceiling Remediation Results

	Pre-Remediation (In-process)	Post-Remediation
Maximum (dpm/100cm^2)	38,530	38,530
Minimum (dpm/100cm^2)	8,010	8,010
Average (dpm/100cm^2)	12,981	12,981
Average (μCi/m^2)	0.58	0.58
Source Term (μCi)	415.18	415.18

4) Inaccessible Areas

a) Floors

Approximately forty linear feet of contaminated cracks and expansion joints were identified in survey unit 776031 after floor shaving was completed. The average contamination of these cracks on the surface before remediation was 4,534,083 dpm/100cm^2. Only limited remediation was possible (to a depth of 2") to maintain the structural stability of the floor. Measurements collected after crack remediation indicate average contamination levels in the cracks to be 2,337,458 dpm/100cm^2. These levels indicate a decontamination factor (DF) of 1.94, or a source term reduction of 48%.

b) Walls

No inaccessible areas were identified on the walls of survey unit 776031.

c) Ceilings

No inaccessible areas were identified on the ceiling of survey unit 776031.

5.) PDS Survey Results Summary

The values for the accessible areas and inaccessible areas were summed and divided by the total area for the survey unit to calculate the "Average Surface Contamination Value" ($ASCV_u$) and source term for the survey unit. The results are summarized in Table 6 below:

Table 6:
PDS Final Results

	Final Results
776031 Source Term Inaccessible Areas (μCi)	129.1
776031 Source Term Accessible Areas (μCi)	3,477.50
776031 Total Source Term (μCi)	3,606.6
Survey Unit Area (m^2)	2,169
$ASCV_u$ ($\mu Ci/m^2$)	1.66
$ASCV_u$ ($dpm/100cm^2$)	36,914

Table 6 Notes:

a) Inaccessible areas source term from Section 4 of this report.

b) Accessible area source term is the sum of source terms attributed to floors, walls and ceiling as determined by the final PDS survey.

c) Total Source Term equals the sums of the source terms of Inaccessible Area + Accessible Area.
Total Source Term = (129.1 + 3,477.50) μCi = 3,606.6 μCi

d) Average Surface Contamination for the Survey Unit ($ASCV_u$) in $dpm/100cm^2$ equals:
$ASCV_u$ = (3,606.6 μCi)(22,200 $dpm/100cm^2$ / 1 $\mu Ci/m^2$) / (2,169 m^2)= 36,914 $dpm/100cm^2$

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Survey Unit 776031 Summary

Total Surface Activity Measurements

30	30	
Number Required	Number Obtained	
MIN	4,866	dpm/100 cm^2
MAX	276,825	dpm/100 cm^2
Average	35,593	dpm/100 cm^2
STD DEV	63,932	dpm/100 cm^2

Total Surface Area	2169	m^2
Inaccessible Areas	105.3	µCi, Alpha
Accessible Surfaces	3477.5	µCi, Alpha

Total Inventory	3582.8	µCi, Alpha
$ASCV_u$	36,670	dpm/100cm^2
$ASCV_u$	1.65	µCi per m^2

Building 776 - Survey Unit 776031
Follow-up NaI Data
Floor and Ceiling

Location #	Column letter	Column Number	North	East	Surface	Gross Counts	In-process Dpm/100cm2	Follow-up Dpm/100cm2
31-1	K	8	15	5	Floor	969	53,206	6,902
31-2	K	8	13	15	Floor	949	47,973	6,902
31-3	K	9	19	7	Floor	2666	286,657	159,187
31-4	K	9	13	19	Floor	1796	845,320	76,849
31-5	K	10	13	7	Floor	1537	1,026,017	52,337
31-6	K	10	19	19	Floor	1537	1,142,878	52,337
31-7	K	11	19	1	Floor	3584	1,700,224	247,743
31-8	K	11	8	17	Floor	1368	No Data	69,530
31-9	K	11	3	1	Floor	1862	72,899	13,618
31-10	K	10	9	11	Floor	5133	412,936	633,708
31-11	K	10	5	5	Floor	2022	852,820	31,677
31-12	K	9	1	12	Floor	2554	1,580,233	105,266
31-13	K	9	5	9	Floor	2318	167,180	72,621
31-14	Inaccessible				Floor			
31-15	Inaccessible				Floor			
31-16	J	7	15	15	Floor	1196	211,578	20,064
31-17	J	8	12	3	Floor	951	74,572	6,902
31-18	J	8	12	11	Floor	1347	42,130	71,860
31-18A	J	8	18	16	Floor	1002	No Data	12,400
31-19	J	9	17	4	Floor	1274	59,128	59,128
31-19A	J	9	18	8	Floor	1435	1,235,581	42,683
31-20	J	9	17	15	Floor	1532	1,672,674	51,863
31-21	J	10	19	8	Floor	1111	555,785	12,019
31-22	J	10	11	11	Floor	3287	245,581	357,088
31-23	J	11	11	3	Floor	1106	164,215	11,546
31-24	J	11	19	11	Floor	1357	No Data	79,012
31-25	J	11	3	12	Floor	1211	No Data	53,547
31-26	J	11	9	2	Floor	2296	961,744	69,578
31-27	J	10	1	13	Floor	1744	439,971	13,618
31-28	J	10	7	8	Floor	1852	508,081	13,618
31-29	J	9	7	14	Floor	2394	1,475,407	83,134
31-30A	J	9	5	3	Floor	1099	46,047	10,884
31-30	J	9	5	8	Floor	2668	1,157,791	121,036
31-31	J	8	9	11	Floor	2108	118,517	43,573
31-32	J	8	5	4	Floor	2162	234,593	51,042
31-34	H	7	17	3	Floor	3162	2,482,936	206,129
31-35	H	7	16	16	Floor	1225	431,337	22,809
31-35A	H	7	15	18	Floor	2553	1,549,360	148,492
31-36	H	8	16	16	Floor	1313	246,279	31,137
31-36A	H	8	13	15	Floor	2452	182,616	91,157
31-37	H	8	15	15	Floor	1084	86,337	9,464
31-37A	H	8	11	19	Floor	2434	1,847,616	137,230

Building 776 - Survey Unit 776031
Follow-up NaI Data
Floor and Ceiling

Location #	Column letter	Column Number	North	East	Surface	Gross Counts	In-process Dpm/100cm2	Follow-up Dpm/100cm2
31-38	H	9	18	3	Floor	1186	43,779	43,779
31-38A	H	9	12	8	Floor	2748	1,840,814	132,102
31-39	H	9	16	13	Floor	2271	1,166,599	66,120
31-40	H	10	15	1	Floor	1921	608,895	17,706
31-41	H	10	11	11	Floor	2488	603,750	96,137
31-42	H	11	11	1	Floor	1965	257,422	23,792
31-43	H	11	12	13	Floor	2040	121,570	34,167
31-44	H	12	11	15	Floor	1293	50,930	50,930
31-45	H	12	13	16	Floor	1317	55,116	55,116
31-46	H	12	10	16	Floor	1288	111,105	28,771
31-47	H	12	8	2	Floor	2182	106,831	53,809
31-48	H	11	8	19	Floor	2215	124,012	58,374
31-49	H	11	8	1	Floor	2192	291,017	55,192
31-50	H	10	9	11	Floor	2106	838,169	106,187
31-51	H	10	4	16	Floor	2734	1,736,860	165,622
31-52	H	9	7	16	Floor	2781	901,147	170,070
31-53	H	9	7	5	Floor	2414	1,423,256	135,337
31-54	H	8	4	15	Floor	7424	4,147,762	778,916
31-55	H	8	1	9	Floor	4309	1,684,797	348,029
31-56	H	7	1	12	Floor	3842	3,026,948	283,431
31-57	H	7	1	8	Floor	5305	2,474,826	485,802
31-58	G	7	19	9	Floor	7286	2,778,488	759,827
31-59	G	7	20	13	Floor	4834	2,950,901	420,651
31-60	G	8	19	9	Floor	3480	2,193,314	233,357
31-61	G	8	17	13	Floor	3313	3,885,262	210,256
31-62	G	9	12	1	Floor	2210	555,523	57,682
31-63	G	9	15	15	Floor	1016	12,817	12,817
31-64	G	10	19	2	Floor	2437	417,907	89,082
31-65	G	10	11	14	Floor	2495	111,192	97,105
31-66	G	11	15	5	Floor	1252	44,128	44,128
31-67	G	11	14	15	Floor	1223	39,070	39,070
31-68	G	12	16	4	Floor	2063	1,174,709	37,348
31-69	G	12	17	13	Floor	1294	51,453	51,453
31-70	G	12	1	19	Floor	1218	724,535	22,146
31-71	G	12	1	9	Floor	2206	136,221	57,129
31-72	G	11	4	16	Floor	1519	157,587	50,633
31-73	G	11	9	1	Floor	1957	73,081	22,686
31-74	G	10	7	11	Floor	1963	1,757,965	92,654
31-75	G	10	7	8	Floor	2588	1,477,326	151,805
31-76	G	9	17	13	Floor	1689	117,384	66,722
31-77	G	9	10	1	Floor	3822	434,477	268,592
31-78	G	8	9	11	Floor	4147	1,737,035	299,350
31-79	G	8	6	9	Floor	2002	1,436,424	96,345

Building 776 - Survey Unit 776031
Follow-up NaI Data
Floor and Ceiling

Location #	Column letter	Column Number	North	East	Surface	Gross Counts	In-process Dpm/100cm2	Follow-up Dpm/100cm2
31-80	G	7	1	14	Floor	5019	2,787,035	381,877
31-81	G	7	9	8	Floor	2824	580,291	174,140
31-82	K	8	20	5	Ceiling	35	10,451	10,451
31-83	K	8	20	15	Ceiling	39	10,451	10,451
31-84	K	9	15	5	Ceiling	48	8,010	8,010
31-85	K	9	18	17	Ceiling	52	8,010	8,010
31-86	K	10	17	6	Ceiling	53	8,010	8,010
31-87	K	10	12	12	Ceiling	39	8,010	8,010
31-88	K	11	11	3	Ceiling	33	8,010	8,010
31-89	K	11	5	11	Ceiling	50	8,010	8,010
31-90	K	11	3	4	Ceiling	54	8,010	8,010
31-91	K	10	5	14	Ceiling	52	8,010	8,010
31-92	K	10	3	4	Ceiling	78	11,831	11,831
31-93	K	9	8	16	Ceiling	59	8,010	8,010
31-94	K	9	6	7	Ceiling	80	12,778	12,778
31-95	INACCESSIBLE		COOLING EQUIP.		Ceiling			
31-96	INACCESSIBLE		COOLING EQUIP.		Ceiling			
31-97	J	7	13	17	Ceiling	60	10,451	10,451
31-98	J	8	14	5	Ceiling	69	12,844	12,844
31-99	J	8	15	13	Ceiling	50	10,451	10,451
31-100	J	9	15	1	Ceiling	72	14,770	14,770
31-100A	J	9	7	7	Ceiling	52	8,010	8,010
31-101	J	9	14	14	Ceiling	61	8,010	8,010
31-102	J	10	13	3	Ceiling	59	8,010	8,010
31-103	J	10	16	15	Ceiling	38	8,010	8,010
31-104	J	11	17	4	Ceiling	52	8,010	8,010
31-105	J	11	19	15	Ceiling	50	8,010	8,010
31-106	J	11	5	11	Ceiling	53	8,010	8,010
31-107	J	11	6	6	Ceiling	57	8,010	8,010
31-108	J	10	7	12	Ceiling	73	9,465	9,465
31-109	J	10	5	7	Ceiling	61	8,010	8,010
31-110	J	9	6	13	Ceiling	63	8,010	8,010
31-111	J	9	9	9	Ceiling	57	8,010	8,010
31-111A	J	9	5	4	Ceiling	60	10,451	10,451
31-112	J	8	6	17	Ceiling	41	10,451	10,451
31-113	J	8	8	2	Ceiling	48	10,451	10,451
31-114	J	7	6	16	Ceiling	65	10,451	10,451
31-115	CEILING PANEL REMOVED				Ceiling			
31-116	H	7	19	15	Ceiling	91	26,971	26,971
31-116A	H	7	12	14	Ceiling	81	20,550	20,550
31-117	H	8	20	5	Ceiling	30	10,451	10,451
31-117A	H	8	13	7	Ceiling	98	31,467	31,467

Building 776 - Survey Unit 776031
Follow-up NaI Data
Floor and Ceiling

Location #	Column letter	Column Number	North	East	Surface	Gross Counts	In-process Dpm/100cm2	Follow-up Dpm/100cm2
31-118	H	8	19	19	Ceiling	55	10,451	10,451
31-118A	H	8	13	17	Ceiling	103	34,677	34,677
31-119	H	9	18	3	Ceiling	70	13,486	13,486
31-119A	H	9	13	5	Ceiling	48	8,010	8,010
31-120	H	9	16	13	Ceiling	72	8,992	8,992
31-121	H	10	20	6	Ceiling	69	8,010	8,010
31-122	H	10	15	13	Ceiling	59	8,010	8,010
31-123	H	11	14	4	Ceiling	61	8,010	8,010
31-124	H	11	13	12	Ceiling	63	8,010	8,010
31-125	H	12	13	2	Ceiling	64	10,451	10,451
31-126	H	12	13	18	Ceiling	47	10,451	10,451
31-127	H	12	2	14	Ceiling	53	10,451	10,451
31-128	H	12	1	3	Ceiling	65	10,451	10,451
31-129	H	11	4	15	Ceiling	57	8,010	8,010
31-130	H	11	4	8	Ceiling	73	15,412	15,412
31-131	H	10	3	14	Ceiling	43	10,451	10,451
31-132	H	10	5	5	Ceiling	78	18,623	18,623
31-133	H	9	6	14	Ceiling	72	14,770	14,770
31-134	INACCESSIBLE		EQUIP.		Ceiling	220		
31-135	H	8	5	16	Ceiling	97	30,824	30,824
31-136	H	8	4	4	Ceiling	99	32,109	32,109
31-137	CEILING PANEL REMOVED				Ceiling			
31-138	CEILING PANEL REMOVED				Ceiling			
31-139	CEILING PANEL REMOVED				Ceiling			
31-140	CEILING PANEL REMOVED				Ceiling			
31-141	G	8	15	4	Ceiling	99	32,109	32,109
31-142	G	8	15	14	Ceiling	109	38,531	38,531
31-143	INACCESSIBLE		EQUIP.		Ceiling	431		
31-144	G	9	16	16	Ceiling	85	23,118	23,118
31-145	G	10	14	5	Ceiling	72	14,770	14,770
31-146	G	10	16	17	Ceiling	56	10,451	10,451
31-147	G	11	11	7	Ceiling	66	10,917	10,917
31-148	G	11	17	18	Ceiling	69	12,844	12,844
31-149	G	12	16	5	Ceiling	66	10,917	10,917
31-150	G	12	11	12	Ceiling	64	10,451	10,451
31-151	G	12	4	13	Ceiling	61	10,451	10,451
31-152	G	12	2	5	Ceiling	55	10,451	10,451
31-153	G	11	7	15	Ceiling	60	10,451	10,451
31-154	G	11	6	2	Ceiling	69	12,844	12,844
31-155	G	10	1	19	Ceiling	59	10,451	10,451
31-156	G	10	9	7	Ceiling	82	21,192	21,192
31-157	CEILING PANEL REMOVED				Ceiling			
31-158	CEILING PANEL REMOVED				Ceiling			

Building 776 - Survey Unit 776031
Follow-up Nal Data
Floor and Ceiling

Location #	Column letter	Column Number	North	East	Surface	Gross Counts	In-process Dpm/100cm2	Follow-up Dpm/100cm2
31-159	G	8	5	15	Ceiling	90	26,329	26,329
31-160	G	8	3	9	Ceiling	70	13,486	13,486
31-161	G	7	5	16	Ceiling	79	19,265	19,265
31-162	CEILING PANEL REMOVED				Ceiling			

Unit	776031	Wall	1	Section	A	Date	8/31/04

Column #							Column #	Row Average
								#DIV/0!
ELEV. (ft)								Row Average #DIV/0!
12								Row Average #DIV/0!
9	3,053	11,239	17,483	7,493	9,990	26,224		Row Average 12,580
6	36,214	28,721	19,980	13,736	3,053	9,990		Row Average 18,616
3	28,721	19,980	27,473	38,711	51,199	31,364		Row Average 32,908
0	3,053	3,053	9,990	13,736	3,053	39,728		Row Average 12,102

Probe# 1	199757	Background 1	142
Efficiency 1	288	RCT 1	KL Creason
Contact Eff. 1	0.0790		

Probe# 2	212340	Background 2	181
Efficiency 2	430	RCT 2	KL CREASON
Contact Eff. 2	0.0870		

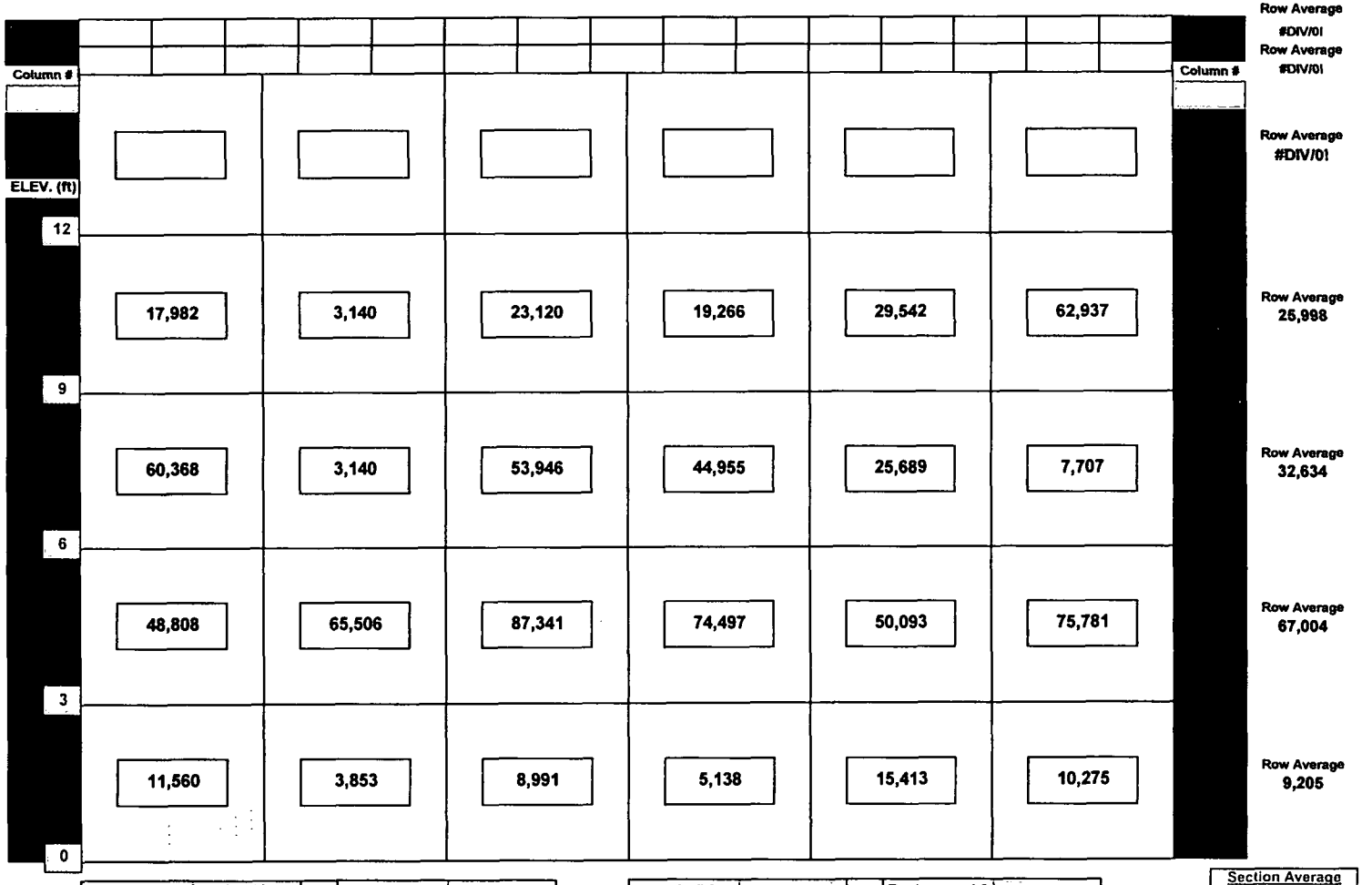
Section Average
19,051

dpm/100cm^2

Count Time (s)	30

19

Unit	776031	Wall	1	Section	B	Date	8/31/04



Column #						Column #	Row Average
							#DIV/0!
ELEV. (ft)							Row Average #DIV/0!
12							Row Average #DIV/0!
	17,982	3,140	23,120	19,266	29,542	62,937	Row Average 25,998
9							
	60,368	3,140	53,946	44,955	25,689	7,707	Row Average 32,634
6							
	48,808	65,506	87,341	74,497	50,093	75,781	Row Average 67,004
3							
	11,560	3,853	8,991	5,138	15,413	10,275	Row Average 9,205
0							

Probe# 1	199757	Background 1	142
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
33,710

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	2	Section	A	Date	8/31/04

Column #							Column #	Row Average
								#DIV/0!
ELEV. (ft)								Row Average #DIV/0!
12								Row Average #DIV/0!
9	19,266	16,698	25,689	12,844				Row Average 18,624
6	20,551			32,111				Row Average 26,331
3	44,955			37,248				Row Average 41,102
0	8,991			50,093				Row Average 29,542

Probe# 1	199757	Background 1	142
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

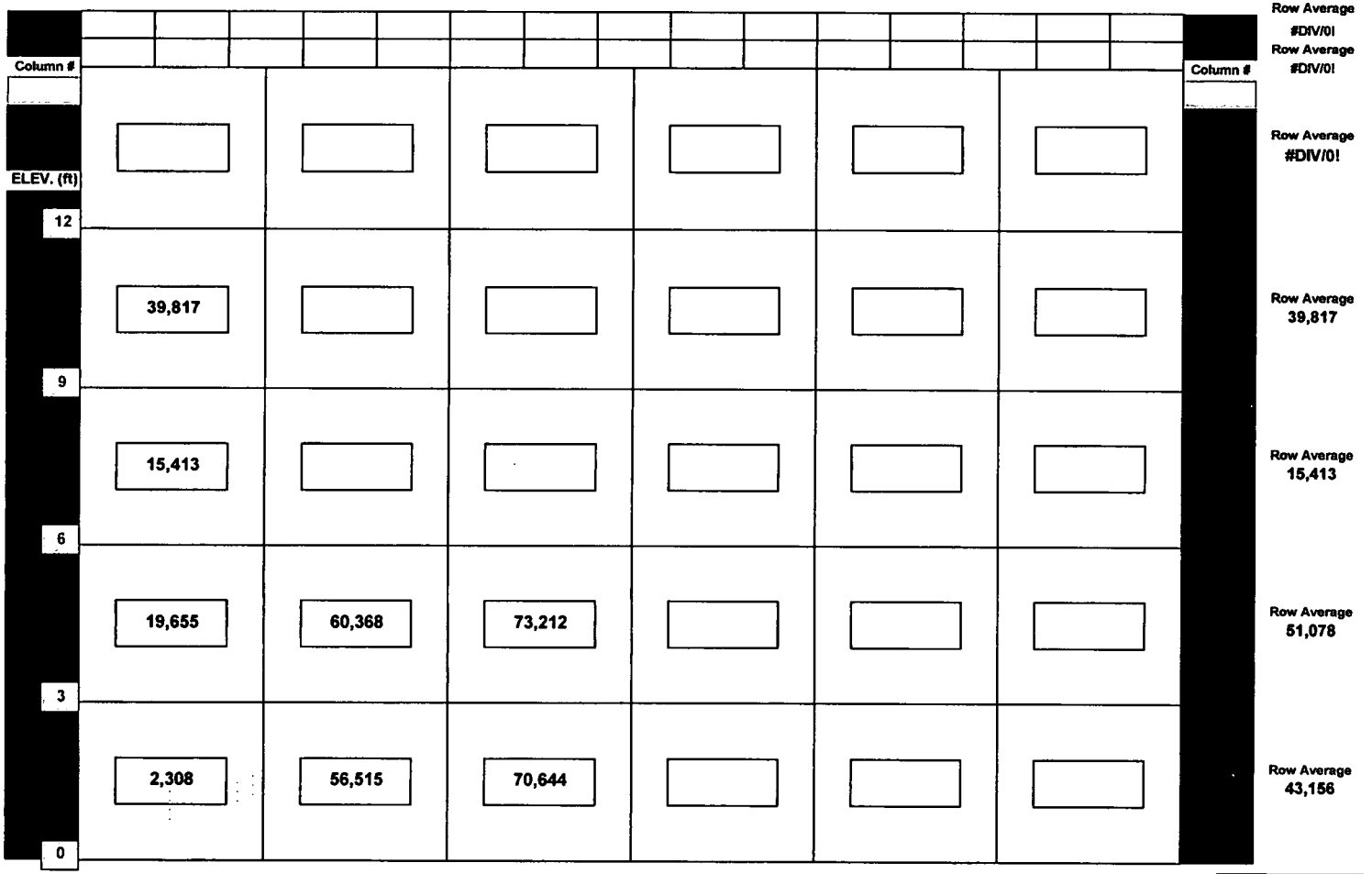
Section Average
26,845

dpm/100cm^2

Count Time (s)	30

2

Unit	776031	Wall	3	Section	A	Date	8/31/04



Probe# 1	199757	Background 1	142
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2	212340	Background 2	181
Efficiency 2	430	RCT 2	KL Creason
Contact Eff. 2	0.0870		

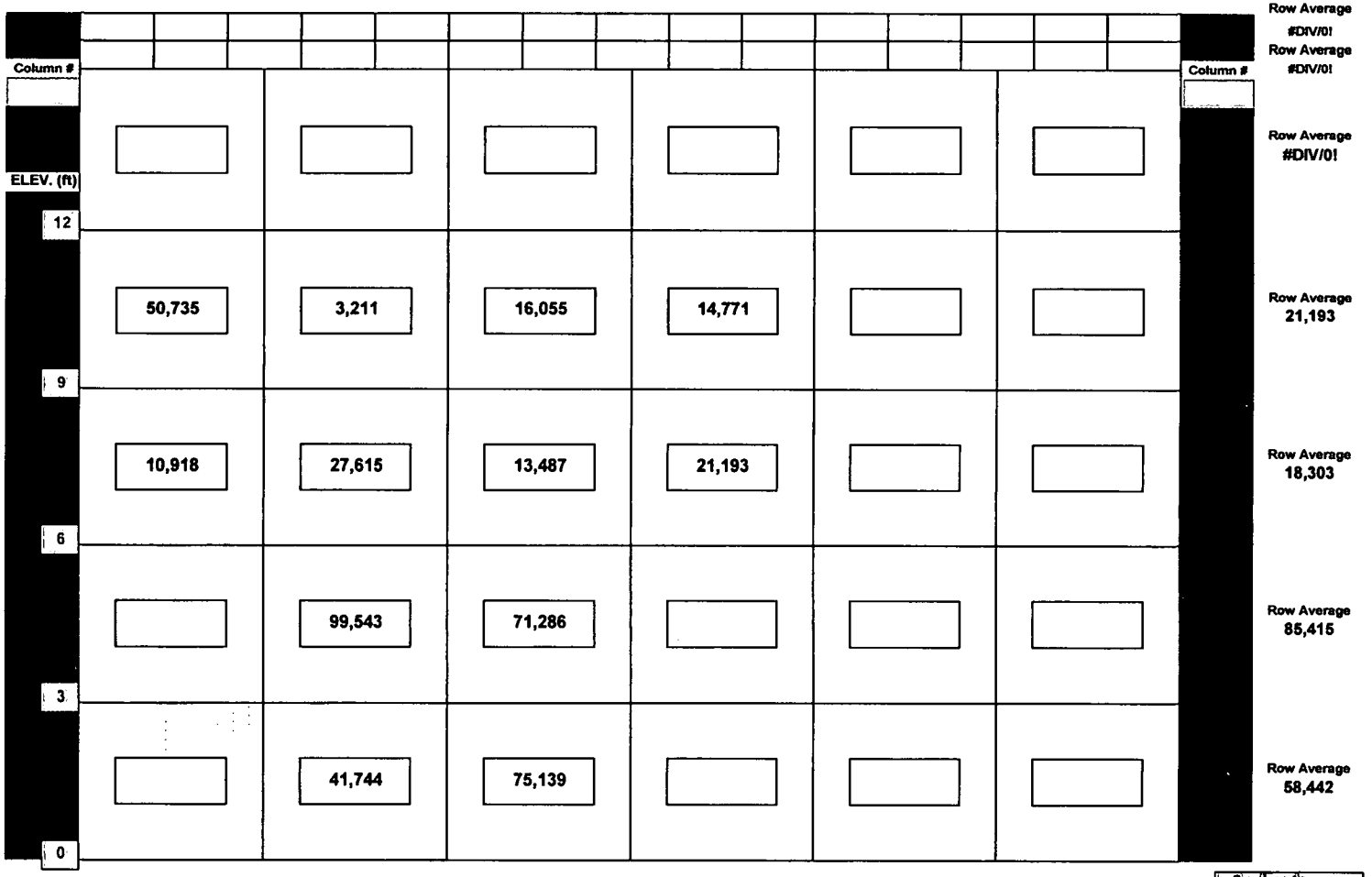
Section Average
42,242

dpm/100cm^2

Count Time (s)	30

22

Unit	776031	Wall	4	Section	A	Date	9/2/04



Probe# 1	199757	Background 1	123
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

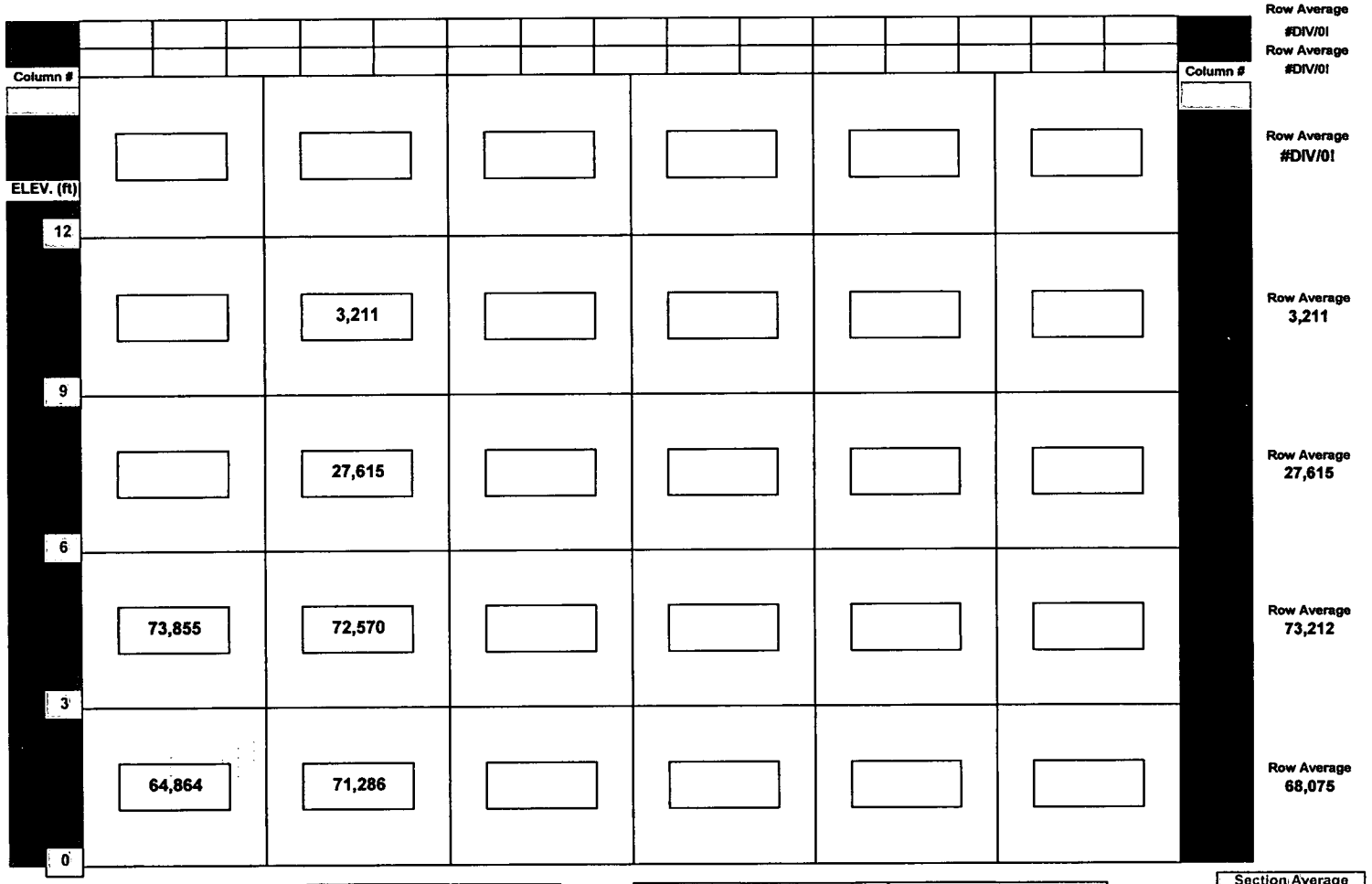
Section Average 37,141

dpm/100cm^2

Count Time (s)	30

23

Unit	776031	Wall	5	Section	A	Date	9/2/04



Probe# 1	199757	Background 1	123
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
52,233

dpm/100cm^2

Count Time (s)	30

24

Unit	776031	Wall	5	Section	A	Date	9/2/04

Column #							Column #	Row Average
								#DIV/0!
								Row Average #DIV/0!
ELEV. (ft)								
12								Row Average #DIV/0!
9			34,037	12,202	36,606	37,891		Row Average 30,184
6			35,322	37,891	8,349	23,762		Row Average 26,331
3	72,570	98,259	64,864	66,148	48,166	77,708		Row Average 71,286
0	40,460	28,900	35,322	44,313	50,735	34,037		Row Average 38,961

Probe# 1	199757	Background 1	123
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average 44,377

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	7	Section	A	Date	9/2/04

ELEV. (ft)	Column #						Column #	Row Average
								#DIV/0!
								Row Average #DIV/0!
12								Row Average #DIV/0!
	66,148	31,469	52,019	46,882	31,469	43,028		Row Average 45,169
9								
	44,313	39,175	55,873	41,744	17,340	14,771		Row Average 35,536
6								
	80,277	41,744	72,570	76,424	50,735	59,726		Row Average 63,579
3								
	37,891	19,909	50,735	46,882	40,460	36,606		Row Average 38,747
0								

Probe# 1	199757	Background 1	123
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

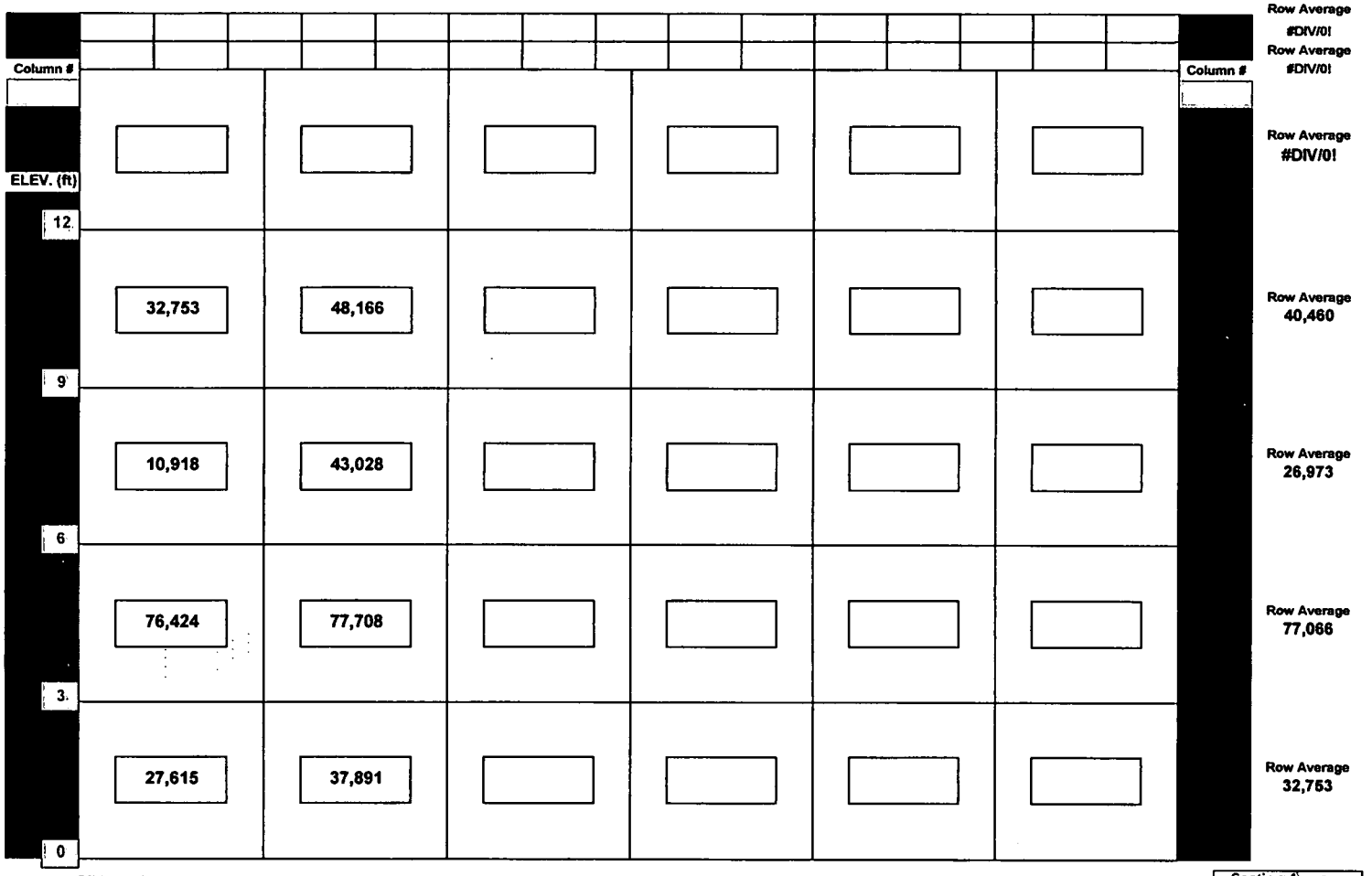
Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
45,758

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	8	Section	A	Date	9/2/04



Probe# 1	199757	Background 1	123
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

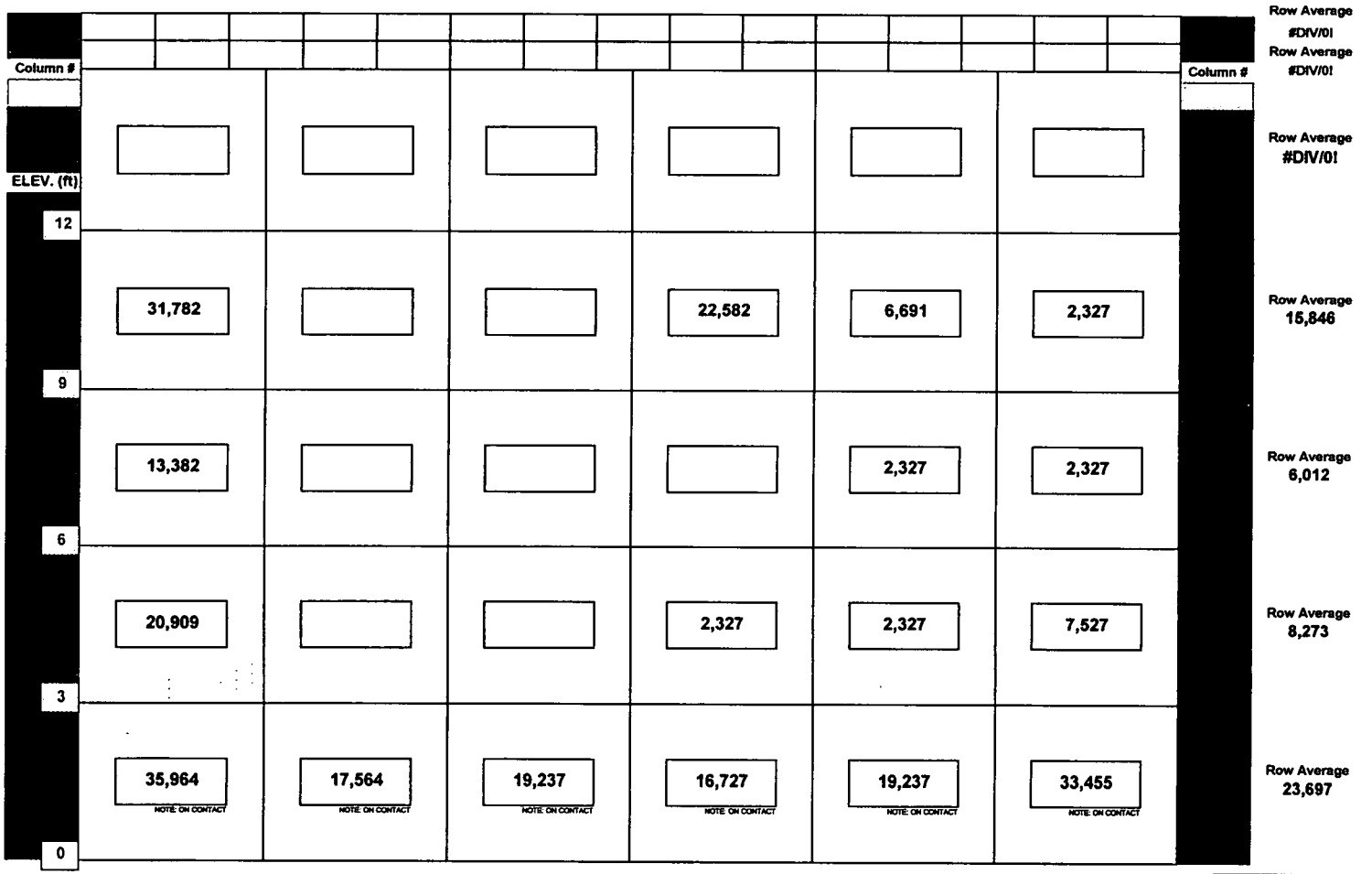
Section Average
44,313

dpm/100cm^2

Count Time (s)	30

27

Unit	776031	Wall	9	Section	A	Date	9/9/04



Probe# 1	212340	Background 1	184
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

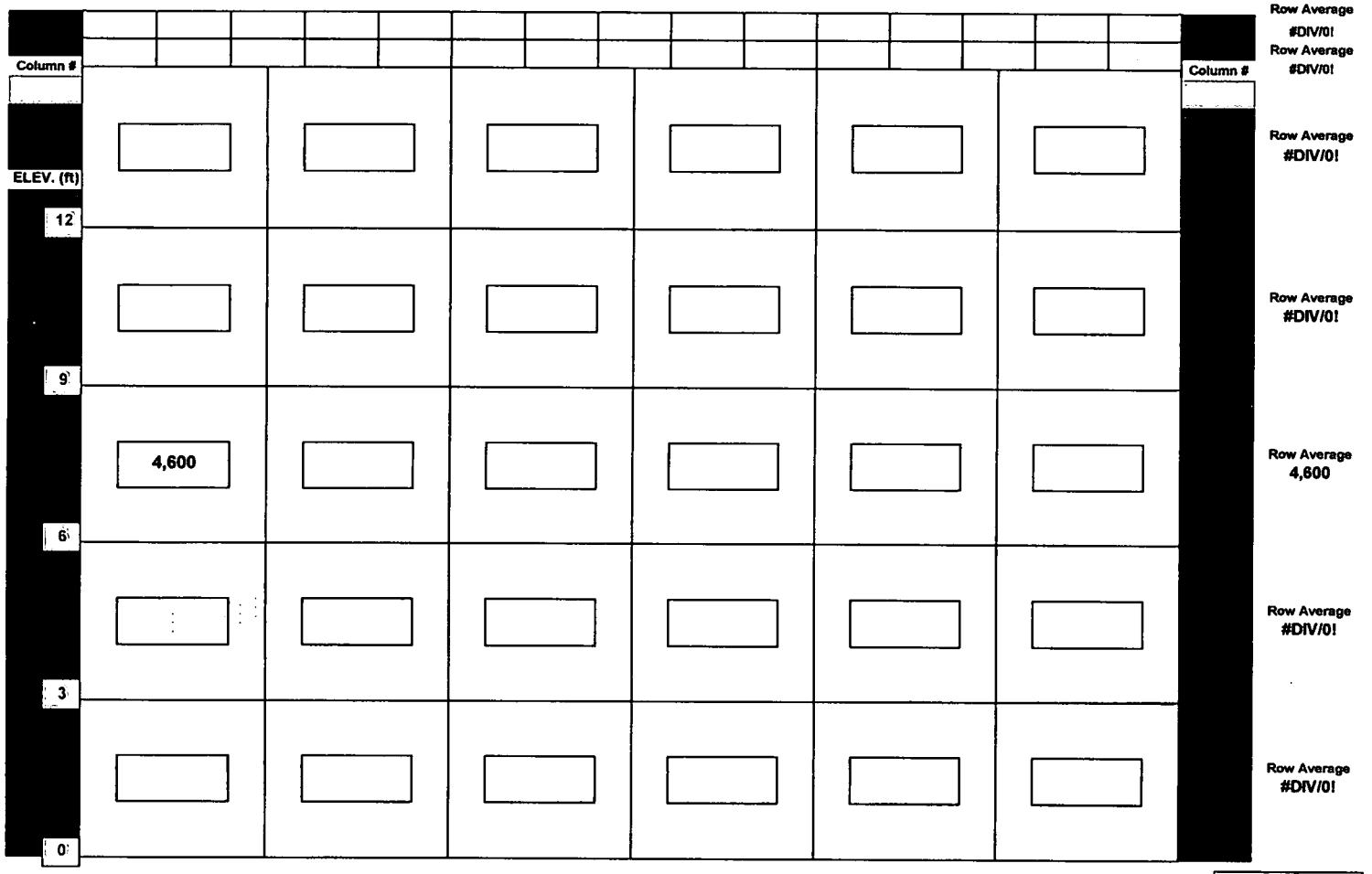
Section Average
15,100

dpm/100cm^2

Count Time (s)	30

28

Unit	776031	Wall	11	Section	A	Date	9/10/04



Probe# 1	212340	Background 1	181
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
4,600

dpm/100cm^2

Count Time (s)	30

be

Unit	776031	Wall	12	Section	A	Date	9/10/04

ELEV. (ft)	Column #						Column #	Row Average
								Row Average #DIV/0!
12								Row Average #DIV/0!
9	12,127	15,473	26,346	8,782	30,528			Row Average 18,651
6	34,709	6,273		36,382	32,200			Row Average 27,391
3	48,928	38,055	42,237	55,619	53,946	39,728		Row Average 46,419
0	33,037 NOTE: ON CONTACT	42,237 NOTE: ON CONTACT	49,764 NOTE: ON CONTACT	48,091 NOTE: ON CONTACT	48,091 NOTE: ON CONTACT	37,219 NOTE: ON CONTACT		Row Average 43,073

Probe# 1	212340	Background 1	181
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

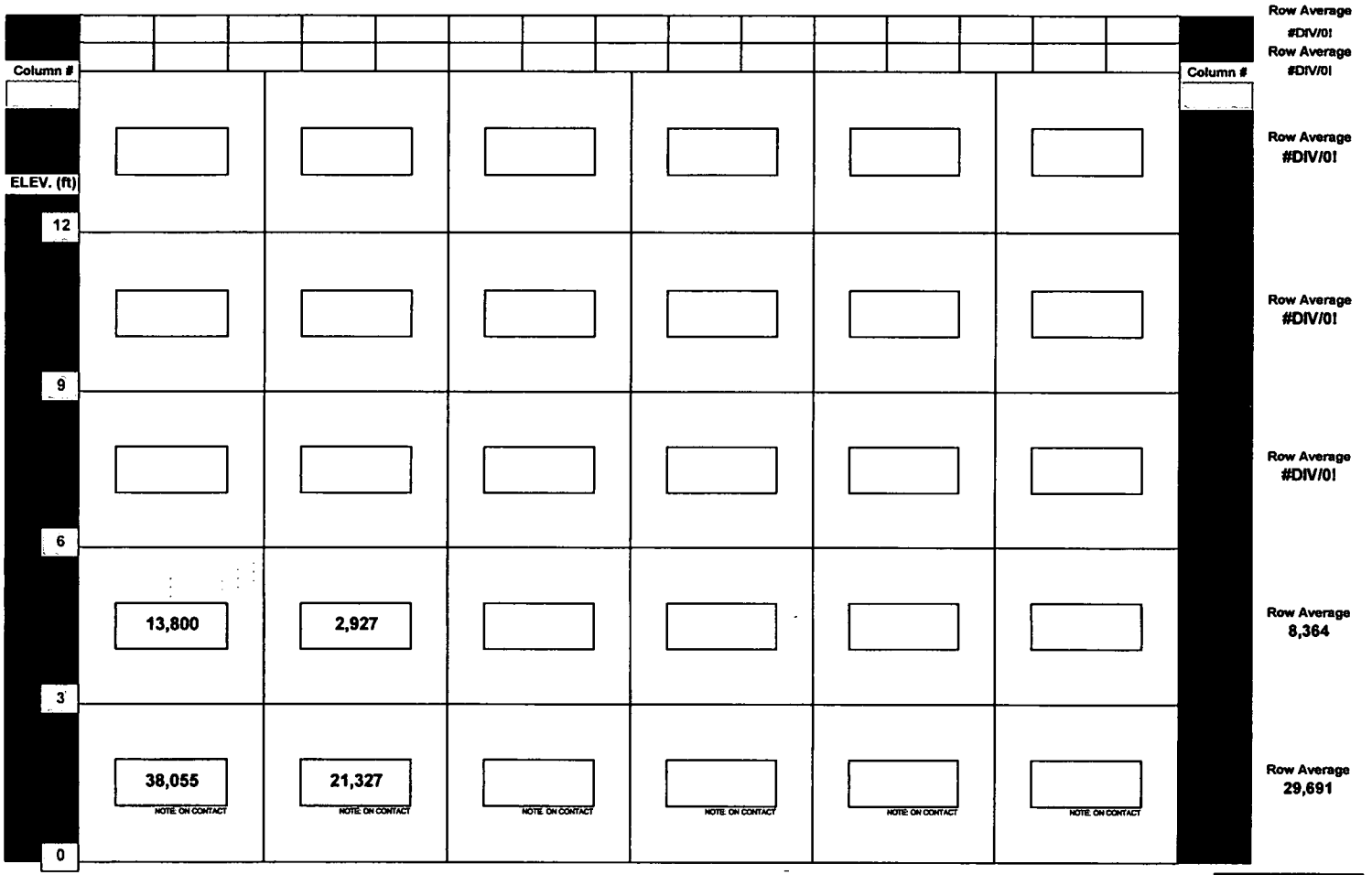
Section Average
35,227

dpm/100cm^2

Count Time (s)	30

30

Unit	776031	Wall	13	Section	A	Date	9/10/04



Probe# 1	212340	Background 1	181
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

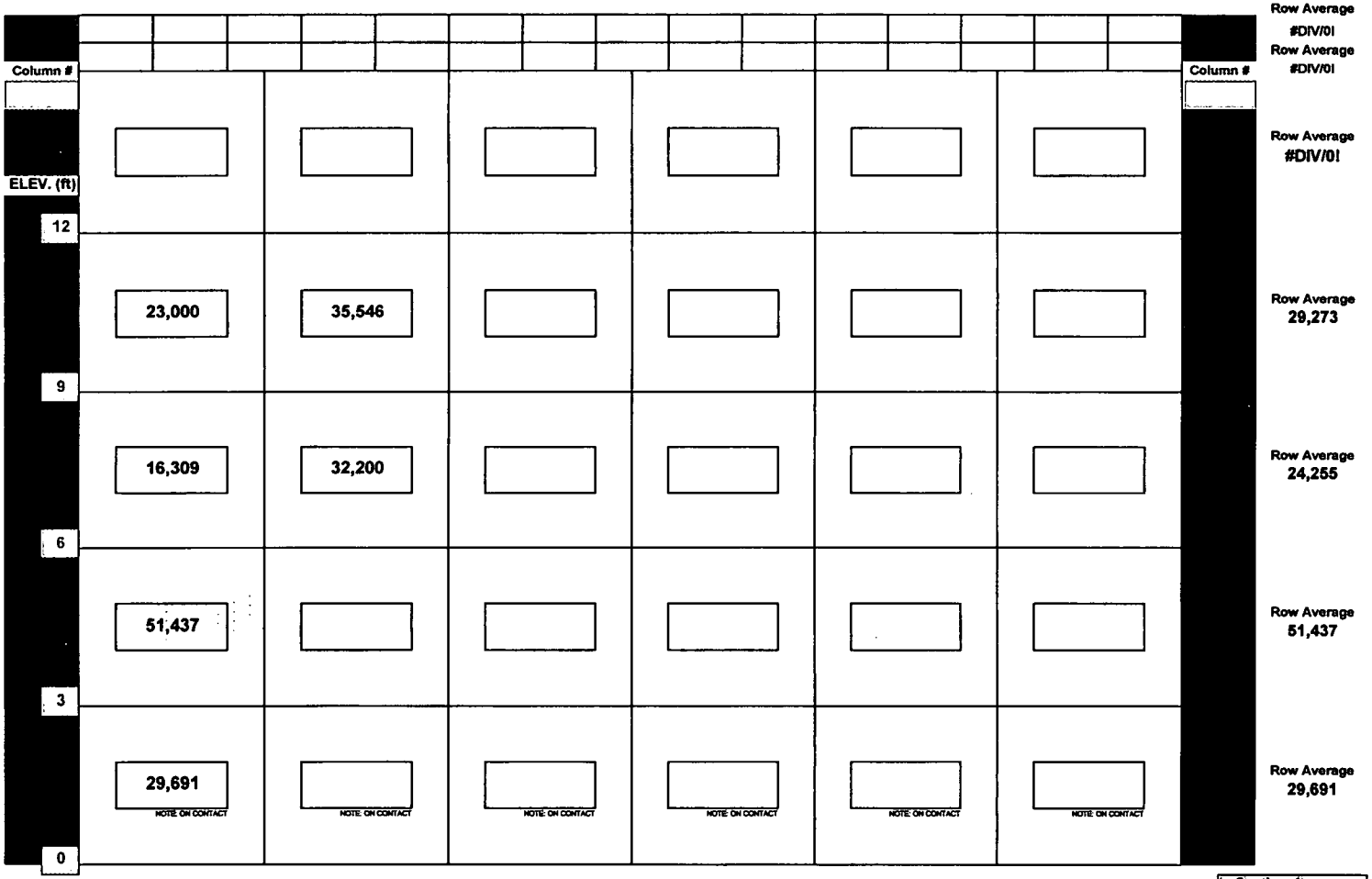
Section Average
19,027

dpm/100cm^2

Count Time (s)	30

W

Unit	776031	Wall	14	Section	A	Date	9/10/04



Probe# 1	212340	Background 1	181
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

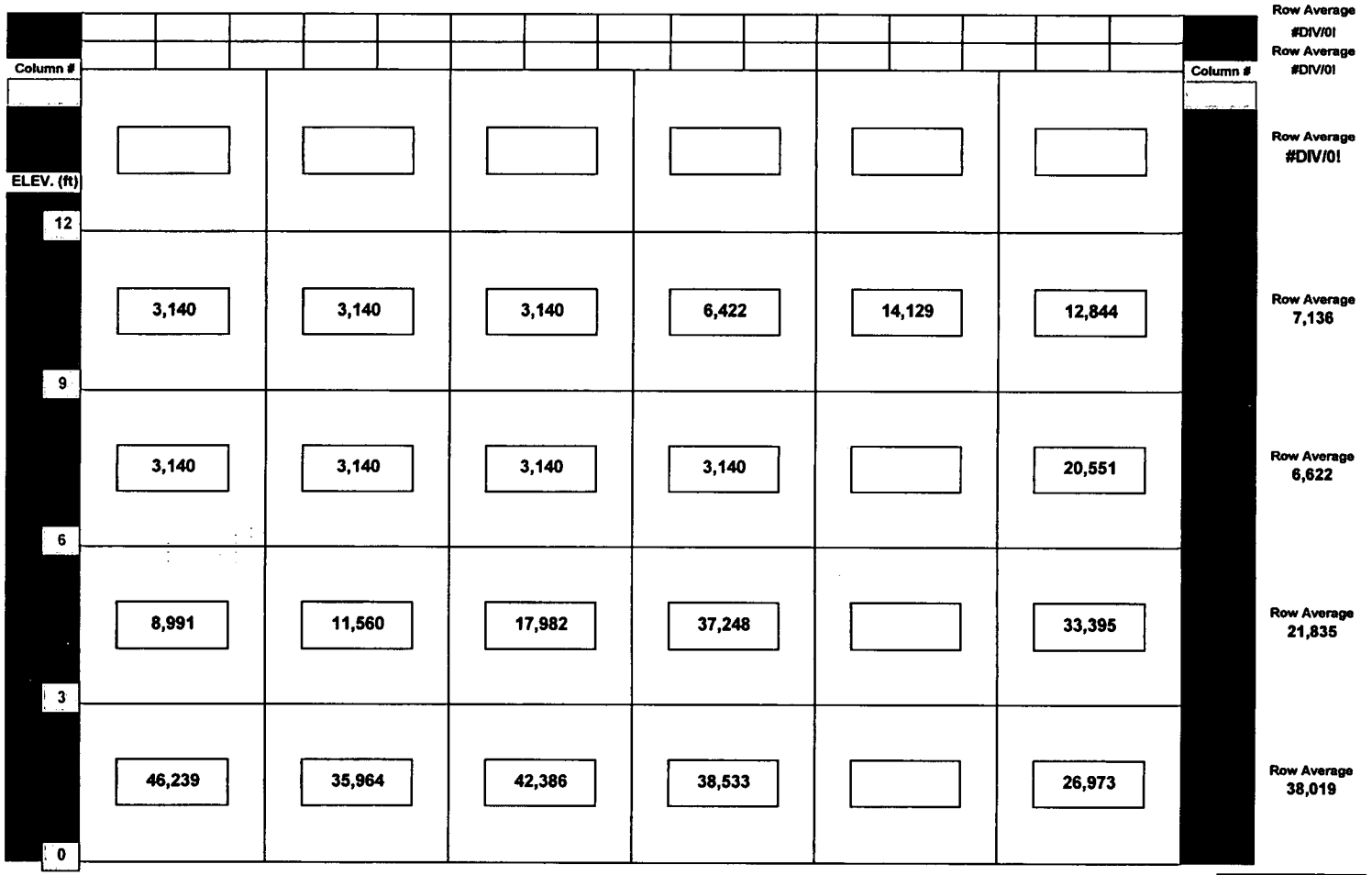
Section Average 31,364

dpm/100cm^2

Count Time (s)	30

32

Unit	776031	Wall	16	Section	A	Date	8/31/04



Column #							Column #	Row Average
								#DIV/0!
								Row Average #DIV/0!
ELEV. (ft)								
12								Row Average #DIV/0!
	3,140	3,140	3,140	6,422	14,129	12,844		Row Average 7,136
9								
	3,140	3,140	3,140	3,140		20,551		Row Average 6,622
6								
	8,991	11,560	17,982	37,248		33,395		Row Average 21,835
3								
	46,239	35,964	42,386	38,533		26,973		Row Average 38,019
0								

Probe# 1	199757	Background 1	142	Probe# 2		Background 2	
Efficiency 1	280	RCT 1	KL Creason	Efficiency 2		RCT 2	
Contact Eff. 1	0.0790			Contact Eff. 2			

Section Average
17,867

dpm/100cm^2

Count Time (s)	30

33

Unit	776031	Wall	17	Section	A	Date	8/31/04

ELEV. (ft)	Column #						Column #	Row Average
								#DIV/0!
								#DIV/0!
								Row Average #DIV/0!
12	3,140	3,140	3,140	8,991	14,129	34,680		Row Average 11,203
9	37,248	5,138	24,404	20,551	17,982	3,140		Row Average 18,077
6	39,817	30,826	48,808	19,266	50,093	12,844		Row Average 33,609
3	47,524	30,826	38,533	28,257	15,413	32,111		Row Average 32,111
0								

Probe# 1	199757	Background 1	142
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average 23,750

dpm/100cm^2

Count Time (s)	30

34

Unit	776031	Wall	17	Section	B	Date	8/31/04

ELEV. (ft)	Column #						Column #	Row Average
								#DIV/0!
								#DIV/0!
								Row Average #DIV/0!
12	38,533	14,129		33,395	19,266	3,140		Row Average 21,693
9	42,386		3,853	3,140	3,140	5,138		Row Average 11,531
6	19,266	30,826	6,422	10,275	44,955	26,973		Row Average 23,120
3	24,404	35,964			23,120	50,093		Row Average 33,395
0								

Probe# 1	199757	Background 1	142
Efficiency 1	280	RCT 1	TA Creason
Contact Eff. 1	0.0790		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average 21,921

dpm/100cm^2

Count Time (s)	30

35

Unit	776031	Wall	18	Section	A	Date	9/9/04

ELEV. (ft)	Column #						Column #	Row Average
								Row Average #DIV/0!
								Row Average #DIV/0!
12								Row Average #DIV/0!
	25,928	33,455	46,000		49,346	47,673		Row Average 40,480
9								
	22,582	32,619	38,473	46,000	2,509	13,382		Row Average 25,928
6								
	28,437	32,619	51,855	47,673	43,491	48,510		Row Average 42,097
3								
	46,837 NOTE ON CONTACT	40,146 NOTE ON CONTACT			35,964 NOTE ON CONTACT	42,655 NOTE ON CONTACT		Row Average 41,400
0								

Probe# 1	212340	Background 1	184
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average 36,960

dpm/100cm^2

Count Time (s)	30

2/9

Unit	776031	Wall	18	Section	B	Date	9/9/04

Column #							Column #	Row Average
								#DIV/0!
								Row Average #DIV/0!
ELEV. (ft)								
12								Row Average #DIV/0!
9	47,673	34,291	30,946	50,182	27,600	49,346		Row Average 40,006
6	17,564	10,036	2,327	25,091	30,109	33,455		Row Average 19,764
3	39,309	25,091	36,800	35,128	53,528	40,982		Row Average 38,473
0	23,418 NOTE: ON CONTACT	33,455 NOTE: ON CONTACT	28,437 NOTE: ON CONTACT	35,964 NOTE: ON CONTACT	51,855 NOTE: ON CONTACT	66,910 NOTE: ON CONTACT		Row Average 40,006

Probe# 1	212340	Background 1	184
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
34,582

dpm/100cm^2

Count Time (s)	30

37

Unit	776031	Wall	19	Section	A	Date	9/10/04

ELEV. (ft)	Column #						Column #	Row Average
								Row Average #DIV/0!
								Row Average #DIV/0!
12								Row Average #DIV/0!
9	28,018	17,146	28,018	23,837	38,891	24,673		Row Average 26,764
6	46,419	12,964	2,308	12,964	7,109	9,618		Row Average 15,230
3	52,273	38,891	51,437	65,655	51,437	32,200		Row Average 48,649
0	43,910 NOTE: ON CONTACT	36,382 NOTE: ON CONTACT	48,091 NOTE: ON CONTACT	46,419 NOTE: ON CONTACT	23,000 NOTE: ON CONTACT	48,928 NOTE: ON CONTACT		Row Average 41,122

Probe# 1	212340	Background 1	181
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

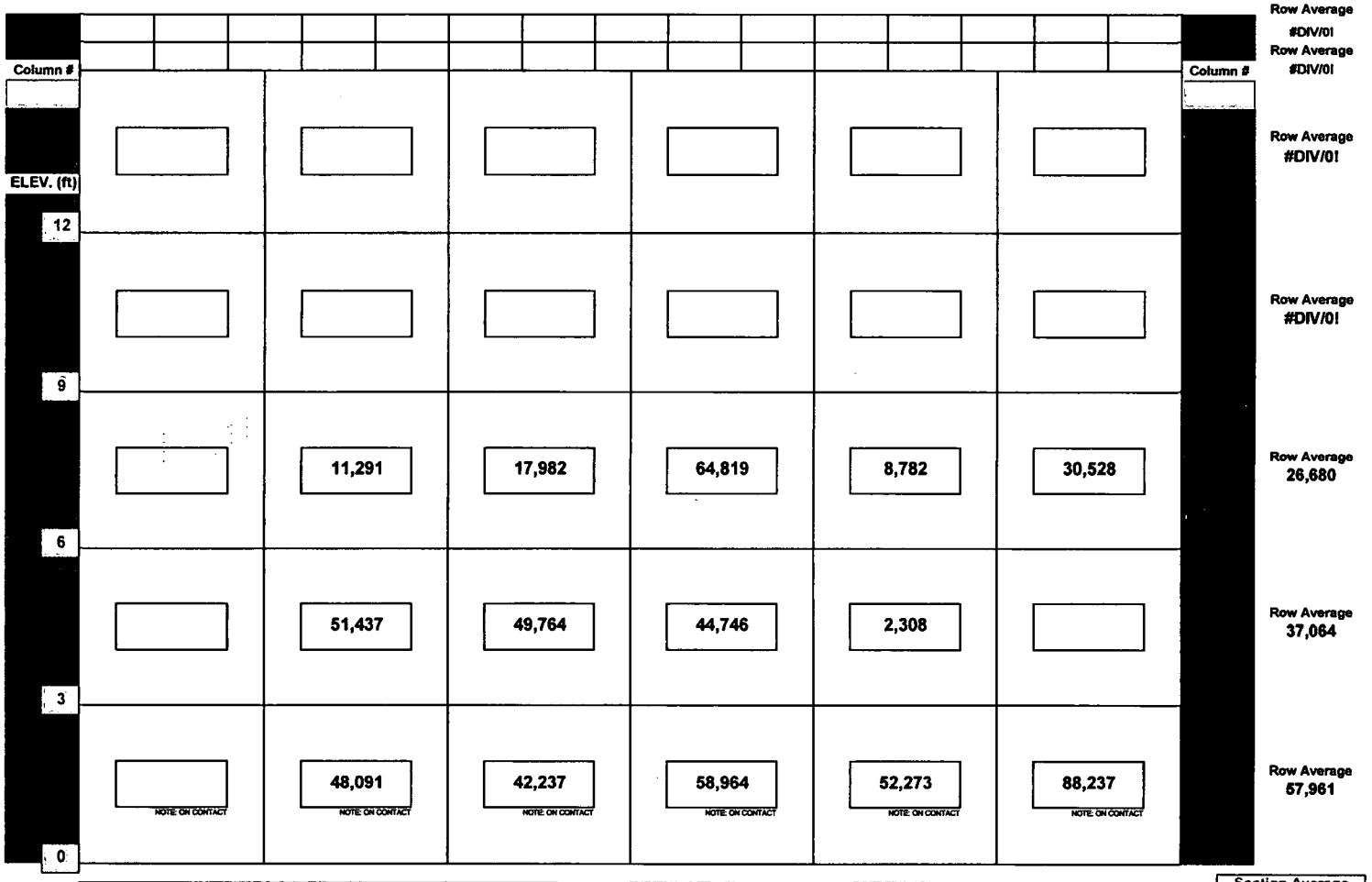
Section Average
32,941

dpm/100cm^2

Count Time (s)	30

28

Unit	776031	Wall	20	Section	A	Date	9/9/04



Probe# 1	212340	Background 1	181
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

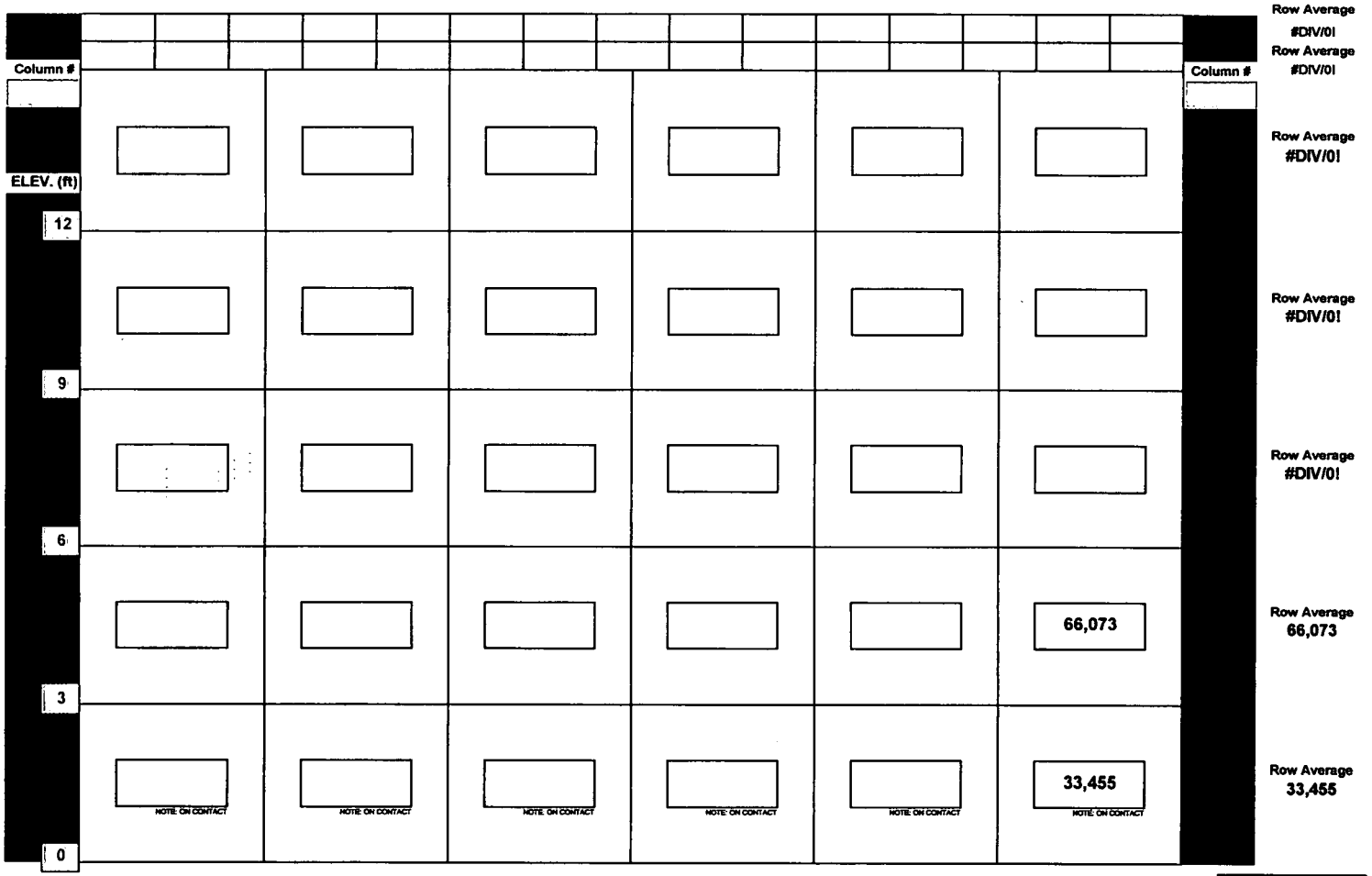
Section Average
40,819

dpm/100cm^2

Count Time (s)	30

39

Unit	776031	Wall	21	Section	A	Date	9/13/04



Probe# 1	212340	Background 1	166
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

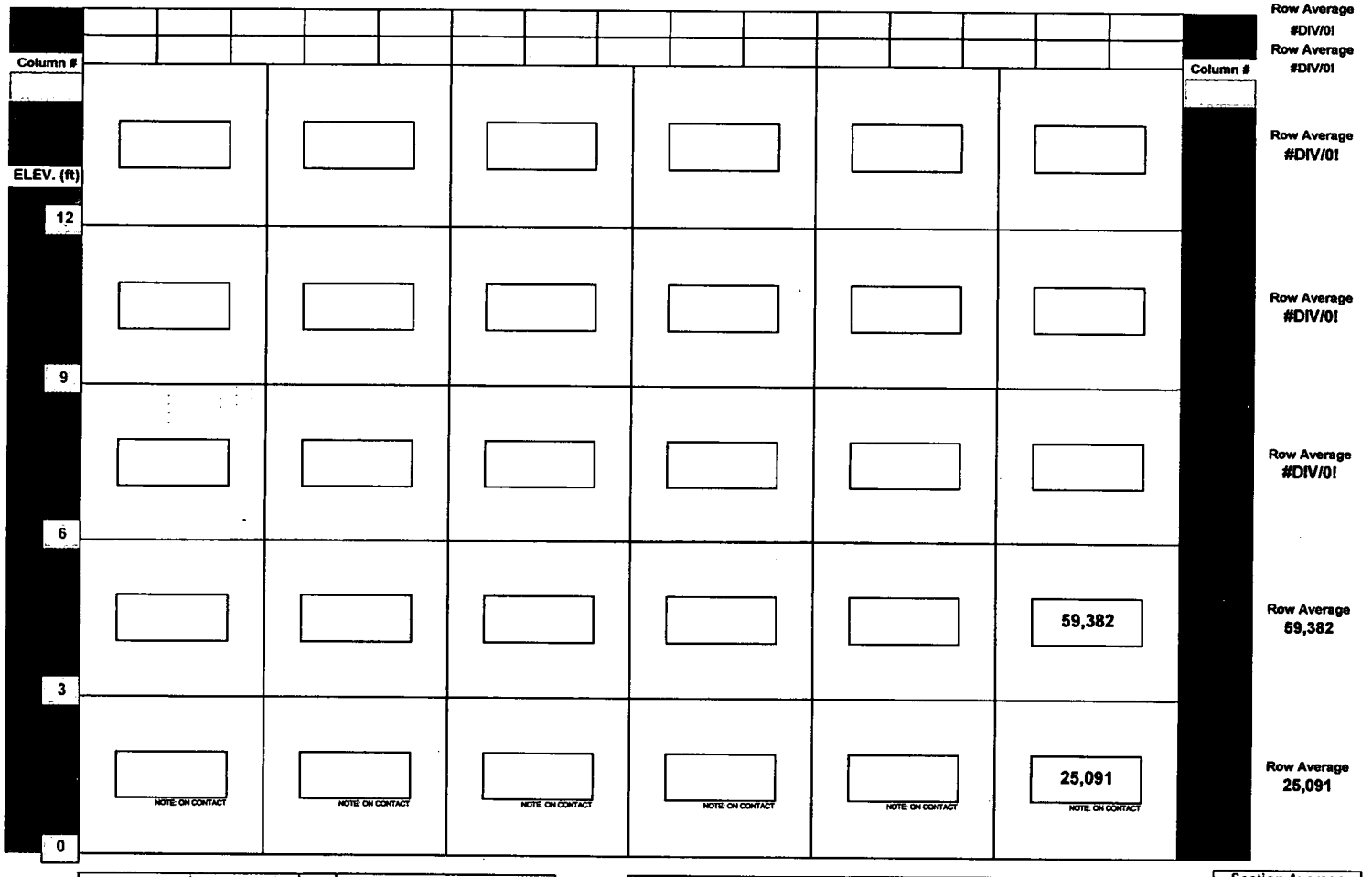
Section Average
49,764

dpm/100cm^2

Count Time (s)	30

9h

Unit	776031	Wall	22	Section	A	Date	9/13/04



Probe# 1	212340	Background 1	166
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

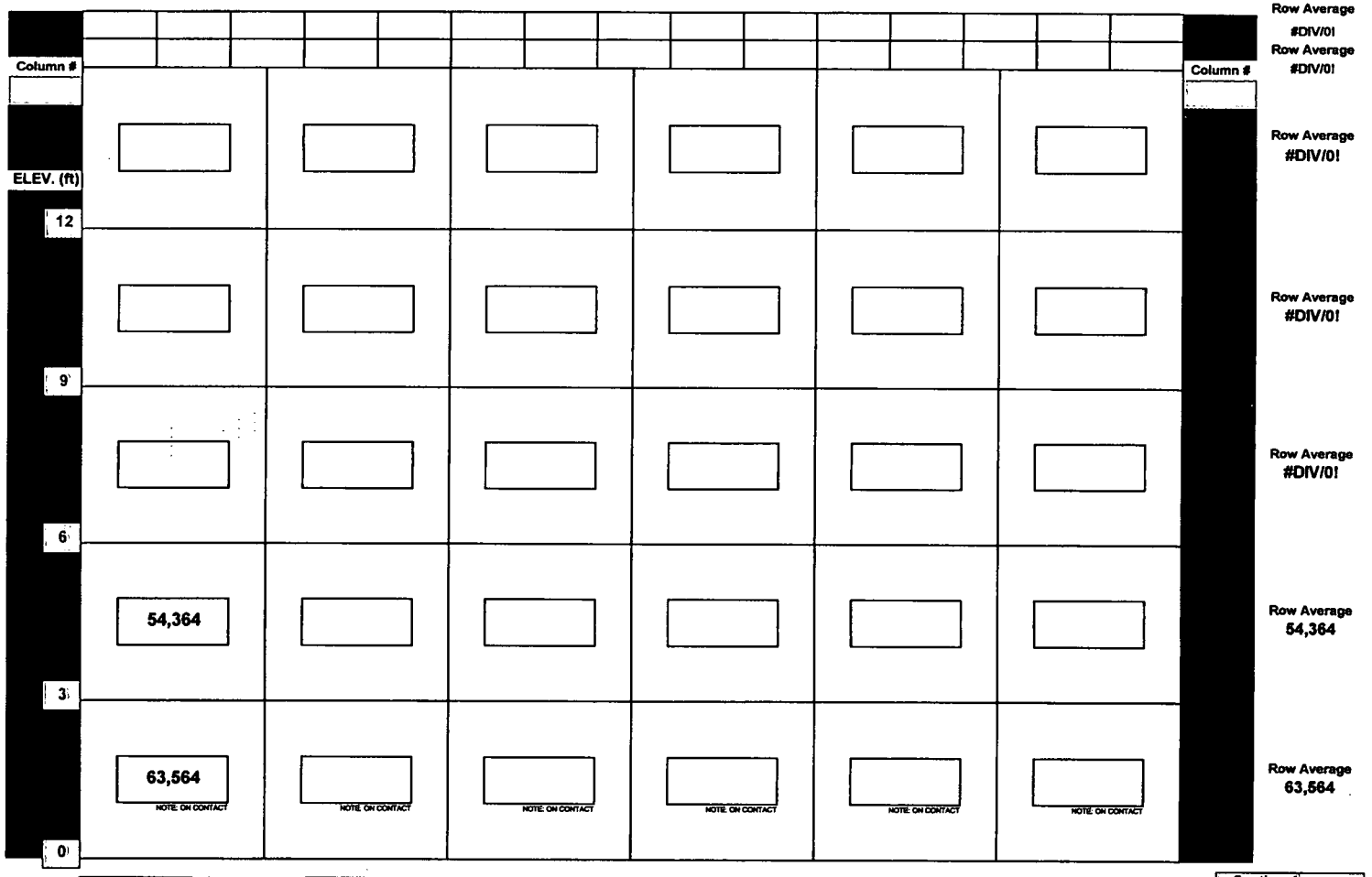
Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
42,237

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	23	Section	A	Date	9/13/04



Probe# 1	212340	Background 1	166
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

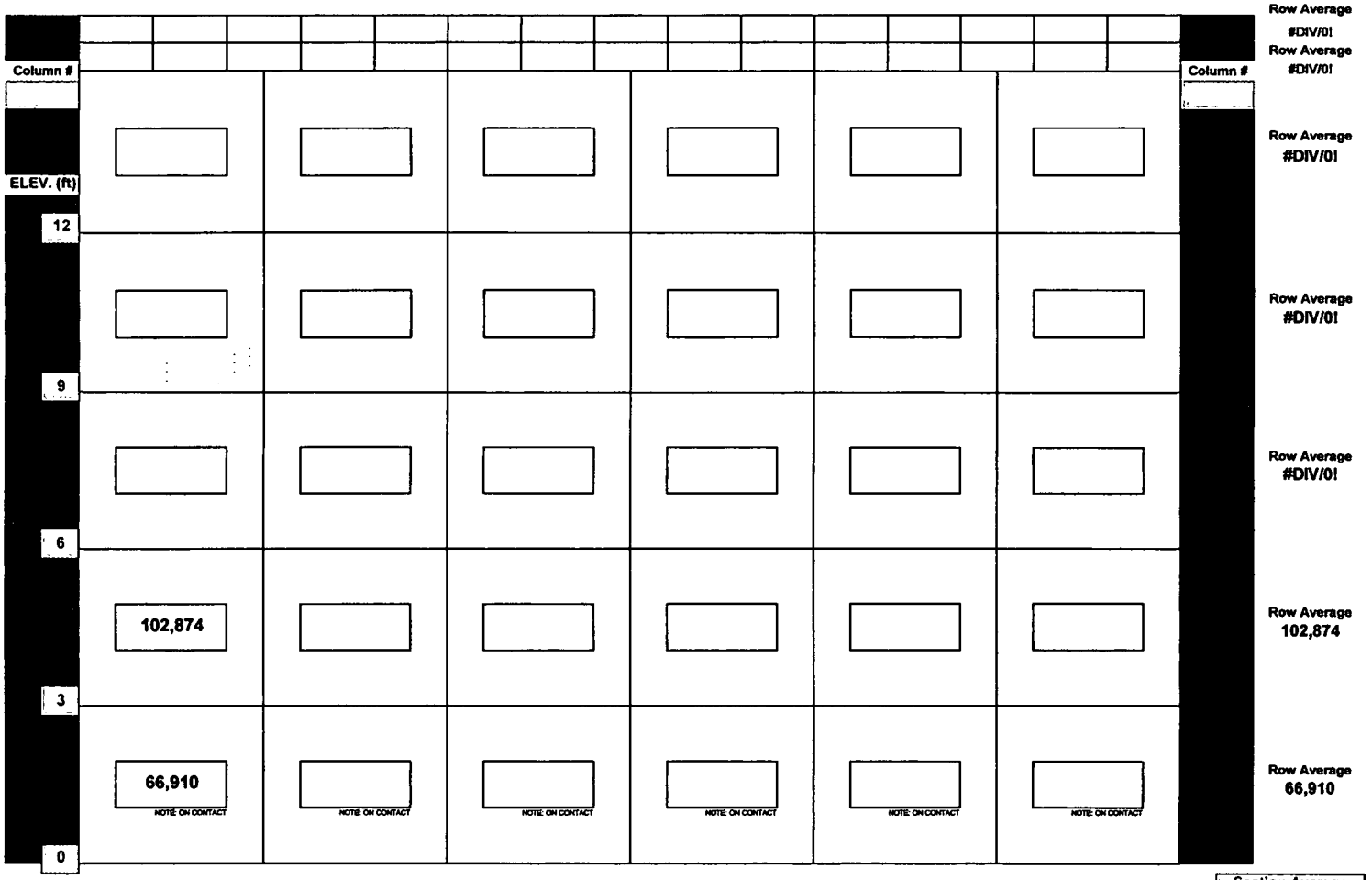
Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
58,964

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	24	Section	A	Date	9/13/04



Probe# 1	212340	Background 1	166
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
84,892

dpm/100cm^2

Count Time (s)	30

42

Unit	776031	Wall	25	Section	A	Date	9/12/04

ELEV. (ft)	Column #						Column #	Row Average
								#DIV/0!
								Row Average #DIV/0!
12								Row Average #DIV/0!
	3,345	27,600	4,182	33,455	3,345	30,109		Row Average 17,006
9								
	26,764	19,237	16,727	5,018	14,218	2,289		Row Average 14,042
6								
	35,964	21,746	2,289	20,073	5,018	7,527		Row Average 15,436
3								
	25,928 NOTE: ON CONTACT	40,982 NOTE: ON CONTACT	32,619 NOTE: ON CONTACT	21,746 NOTE: ON CONTACT	20,909 NOTE: ON CONTACT	23,418 NOTE: ON CONTACT		Row Average 27,600
0								

Probe# 1	212340	Background 1	178
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
18,521

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	26	Section	A	Date	9/12/04

Column #							Column #	Row Average
								#DIV/0!
ELEV. (ft)								Row Average #DIV/0!
12								Row Average #DIV/0!
9	6,691	25,091						Row Average 15,891
6	13,382	15,891						Row Average 14,637
3	24,255	10,036						Row Average 17,146
0	11,709 NOTE: ON CONTACT	9,200 NOTE: ON CONTACT	NOTE: ON CONTACT	NOTE: ON CONTACT	NOTE: ON CONTACT	NOTE: ON CONTACT		Row Average 10,455

Probe# 1	212340	Background 1	178
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

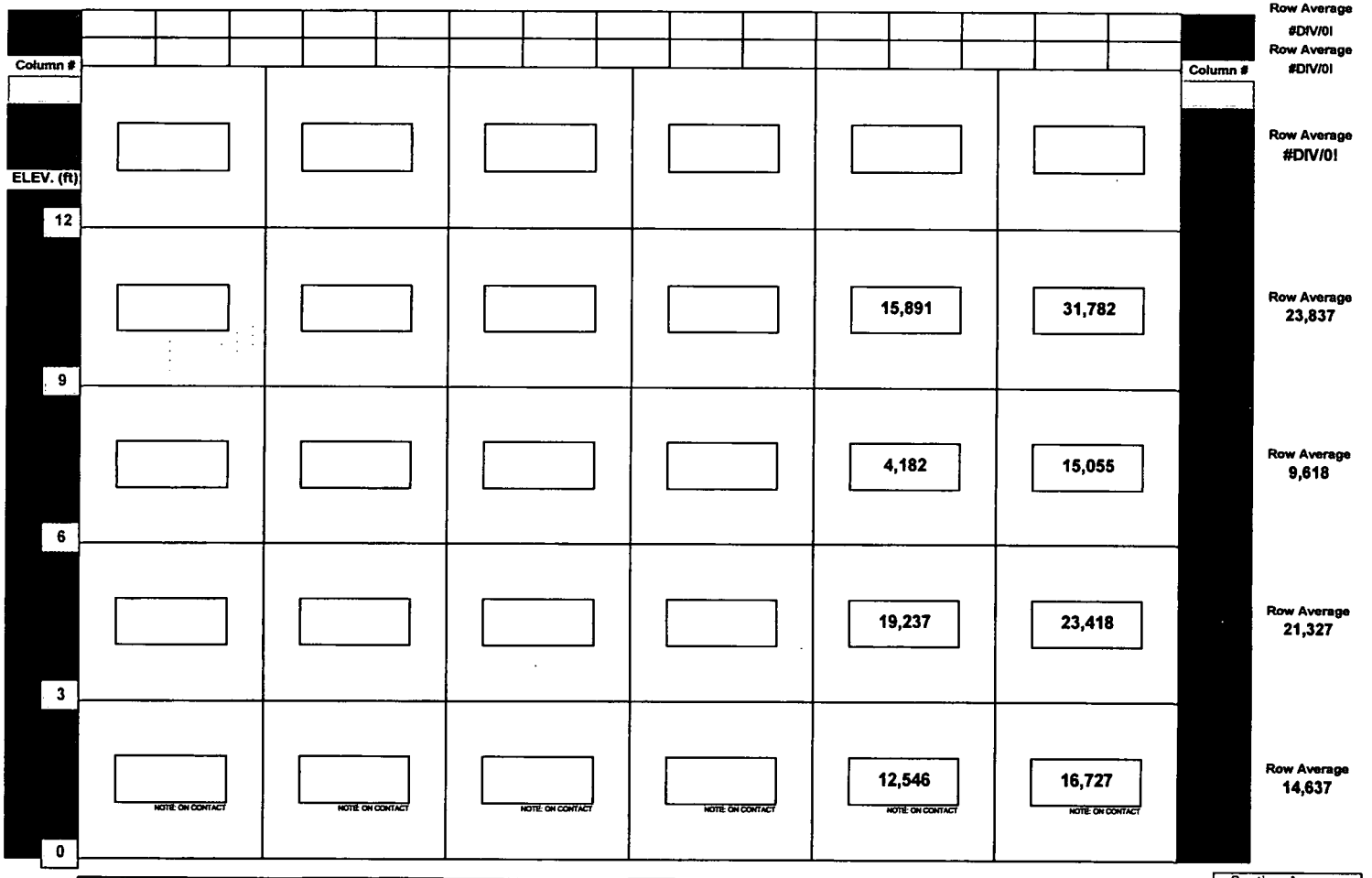
Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
14,532

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	30	Section	A	Date	9/12/04



Probe# 1	212340	Background 1	178
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
17,355

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	31	Section	A	Date	9/12/04

Column #							Column #	Row Average
								#DIV/0!
								Row Average #DIV/0!
ELEV. (ft)								
12								Row Average #DIV/0!
	17,564	15,055	28,437	25,091	9,200	24,255		Row Average 19,934
9								
	18,400	5,855	12,546	2,289	16,727	20,073		Row Average 12,648
6								
	51,019	29,273	34,291	25,928	21,746	37,637		Row Average 33,315
3								
	15,055 NOTE: ON CONTACT	31,782 NOTE: ON CONTACT	37,637 NOTE: ON CONTACT	32,619 NOTE: ON CONTACT	36,800 NOTE: ON CONTACT	20,909 NOTE: ON CONTACT		Row Average 29,134
0								

Probe# 1	212340	Background 1	178
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
23,758

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	32	Section	A	Date	9/13/04

Column #						Column #	Row Average
							#DIV/0!
ELEV. (ft)							Row Average #DIV/0!
12							Row Average #DIV/0!
9	27,600	2,211					Row Average 14,905
6	20,073	2,211	16,727	20,073			Row Average 14,771
3	35,128	2,211	18,400	28,437			Row Average 21,044
0	33,455 NOTE: ON CONTACT	2,211 NOTE: ON CONTACT	35,128 NOTE: ON CONTACT	40,982 NOTE: ON CONTACT	NOTE: ON CONTACT	NOTE: ON CONTACT	Row Average 27,944

Probe# 1	212340	Background 1	166
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

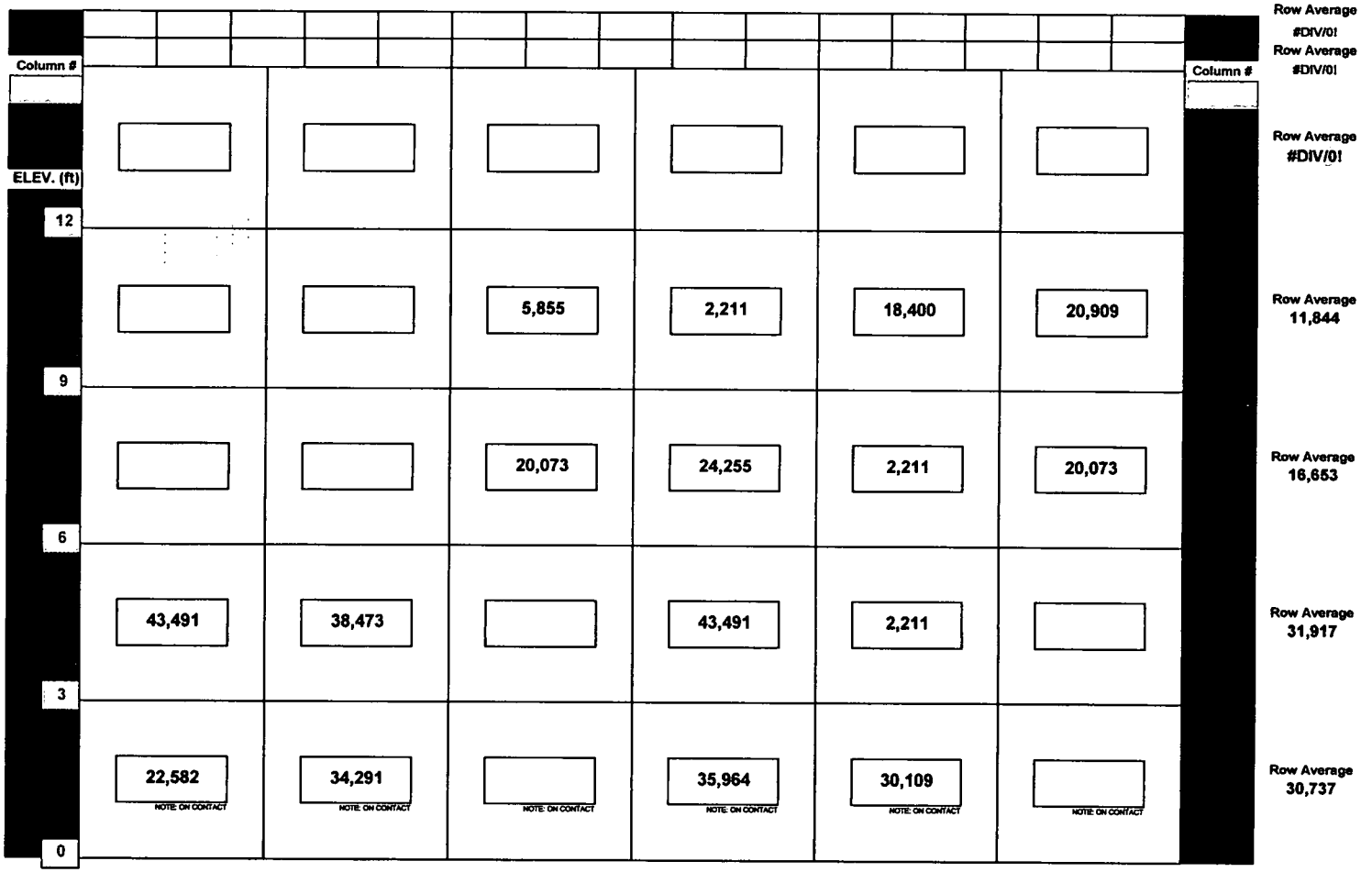
Section Average
20,346

dpm/100cm^2

Count Time (s)	30

8h

Unit	776031	Wall	32	Section	B	Date	9/13/04



Probe# 1	212340	Background 1	166
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

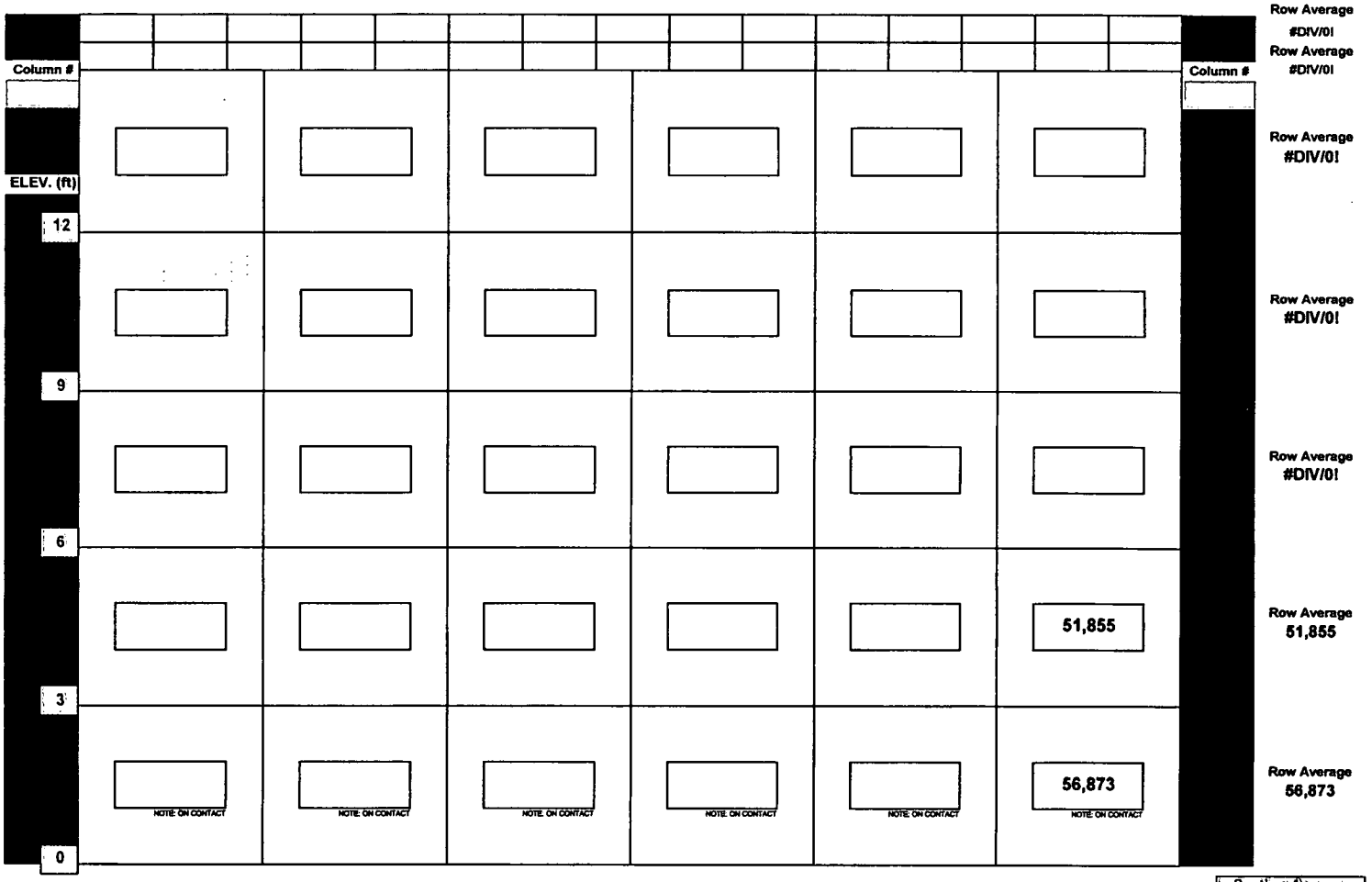
Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
22,787

dpm/100cm^2

Count Time (s)	30

Unit	776031	Wall	33	Section	A	Date	9/13/04



Probe# 1	212340	Background 1	168
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

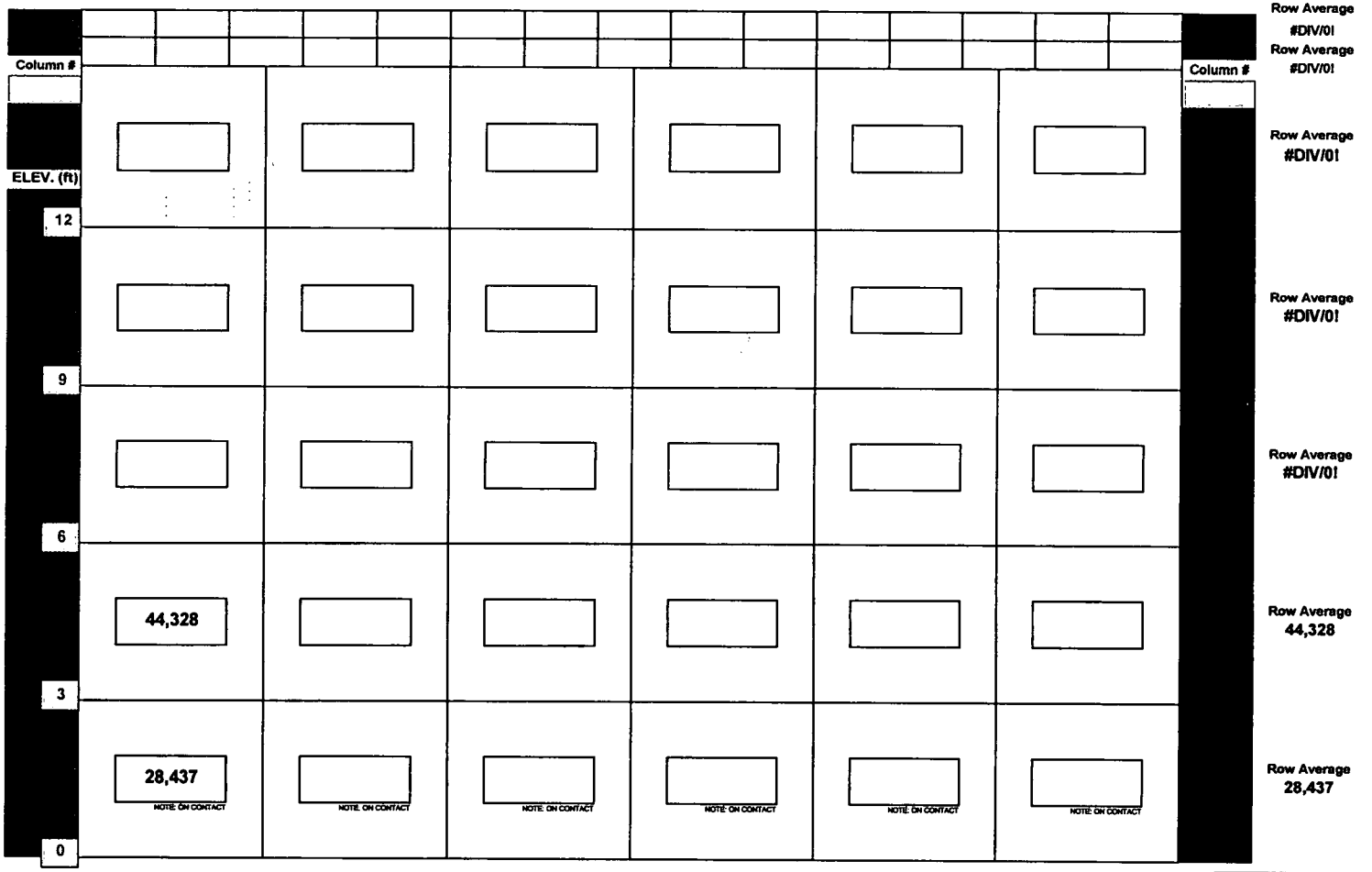
Section Average
54,384

dpm/100cm^2

Count Time (s)	30

8

Unit	776031	Wall	35	Section	A	Date	9/13/04



Probe# 1	212340	Background 1	166
Efficiency 1	430	RCT 1	TA Creason
Contact Eff. 1	0.0870		

Probe# 2		Background 2	
Efficiency 2		RCT 2	
Contact Eff. 2			

Section Average
36,382

dpm/100cm^2

Count Time (s)	30

Total Surface Activity

Survey Area:		2nd Floor	Survey Unit:		776031			
Meter Model:		NE Electra w/ DP6 Probe					Dates Counted:	11/11/04
Instrument #:		1264	4673	2093	n/a	n/a	A priori MDA:	94
Cal. Due Date:		2/24/05	11/3/04	1/31/05	n/a	n/a	Avg. Local Bkgd	2.6
Efficiency (c/d):		0.226	0.217	0.218	n/a	n/a	Avg. Efficiency	0.222
Sample Location #	RCT ID #	Inst. #	Instrument (cpm)		Local Bkgd (cpm)		($dpm/100\ cm^2$)	
1	1	4068	9		4.0		22.5	
2	1	4068	10		0.0		45.0	
3	1	4068	1		3.0		-9.0	
4	1	4068	8		2.0		27.0	
5	1	4068	8		3.0		22.5	
6	1	4068	590		4.0		2639.6	
7	1	4068	96		2.0		423.4	
8	1	4068	37		0.0		166.7	
9	1	4068	16		3.0		58.6	
10	1	4068	14		1.0		58.6	
11	1	4068	6		4.0		9.0	
12	1	4068	32		3.0		130.6	
13	1	4068	13		2.0		49.5	
14	1	4068	22		3.0		85.6	
15	1	4068	73		2.0		319.8	
16	1	4068	51		3.0		216.2	
17	1	4068	11		1.0		45.0	
18	1	4068	30		3.0		121.6	
19	1	4068	12		1.0		49.5	
20	1	4068	7		3.0		18.0	
21	1	4068	17		5.0		54.1	
22	1	4068	60		3.0		256.8	
23	1	4068	12		3.0		40.5	
24	1	4068	15		2.0		58.6	
25	1	4068	13		6.0		31.5	
26	1	4068	18		2.0		72.1	
27	1	4068	17		2.0		67.6	
28	1	4068	4		4.0		0.0	
29	1	4068	7		2.0		22.5	
30	1	4068	4		3.0		4.5	
						MIN	-9.0	
						MAX	2639.6	
						MEAN	170.3	
						SD	476.9	

51

Removable Activity

Survey Area:		2nd Floor	Survey Unit:		776031
Dates Counted:	11/11/04				
A priori MDA:	16				
Efficiency (c/d)	0.333				
Smear Location Number	Smear Results				
	RCT ID #	Serial Number	Gross (cpm)	Bkg.	(dpm/100 cm^2)
1	1	1051	0	0.4	-1
2	1	1051	0	0.4	-1
3	1	1051	1	0.4	2
4	1	1051	2	0.4	5
5	1	1051	0	0.4	-1
6	1	1051	2	0.4	5
7	1	1051	0	0.4	-1
8	1	1051	3	0.4	8
9	1	1051	1	0.4	2
10	1	1051	1	0.4	2
11	1	1051	2	0.4	5
12	1	1051	0	0.4	-1
13	1	1051	0	0.4	-1
14	1	1051	1	0.4	2
15	1	1051	0	0.4	-1
16	1	1051	1	0.4	2
17	1	1051	2	0.4	5
18	1	1051	2	0.4	5
19	1	1051	0	0.4	-1
20	1	1051	3	0.4	8
21	1	1051	1	0.4	2
22	1	1051	1	0.4	2
23	1	1051	2	0.4	5
24	1	1051	1	0.4	2
25	1	1051	0	0.4	-1
26	1	1051	3	0.4	8
27	1	1051	2	0.4	5
28	1	1051	2	0.4	5
29	1	1051	0	0.4	-1
30	1	1051	2	0.4	5
				MIN	-1.2
				MAX	**7.8**
				MEAN	**2.3**
				SD	3.1

52

Sample Location Number	NaI Activity Measurements				
	Measurement Used	Comment	Surface	Coating	(dpm/100 cm^2)
1	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
2	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
3	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
4	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
5	Sodium Iodide	N/A	wall	Thin/No Paint	46,133.0
6	Sodium Iodide	N/A	wall	Thin/No Paint	4,309.0
7	Sodium Iodide	N/A	wall	Thin/No Paint	16,249.0
8	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
9	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
10	Sodium Iodide	N/A	Floor	Thin/No Paint	14,525.0
11	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
12	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
13	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
14	Sodium Iodide	N/A	wall	Thin/No Paint	42,242.0
15	Sodium Iodide	N/A	wall	Thin/No Paint	36,795.0
16	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
17	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
18	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
19	Sodium Iodide	N/A	Floor	Thin/No Paint	4,309.0
20	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,097.0
21	Sodium Iodide	N/A	Ceiling	Thin/No Paint	5,669.0
22	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,097.0
23	Sodium Iodide	N/A	Ceiling	Thin/No Paint	14,445.0
24	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
25	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
26	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
27	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
28	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
29	Sodium Iodide	N/A	Ceiling	Thin/No Paint	4,287.0
30	Sodium Iodide	N/A	Ceiling	Thin/No Paint	13,334.0
				MIN	**4,097**
				MAX	**46,133**
				AVERAGE	**9,452**
				SD	**11,572**

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Data and Sodium Iodide Instrument Information

Survey Area:	2nd Floor	Survey Unit:	776031	Survey Date(s):	11/11/04

Instrument Specifications

Instrument #	1	2
Meter Model:	Ludlum 2350-1	Ludlum 2350-1
Meter Serial #:	192616	203449
Detector Model:	Bicron G-5	Ludlum 44-17
Detector #:	B192N	212340
Detector Size (cm^2):	125	17.8
Calibration Due Date:	12/9/04	12/7/04
Count Time (min)	5	5
Contact Efficiency	8.10%	8.70%

Ratio Used

Pu to Am - 241	8.1

Comments

In cases where the critical level is greater than the calculated dpm/100cm2, the critical level will be used for statistical analysis.

Count Times for backgrounds and samples are equal.

Attenuation Factors: Based on observation of Walls and Ceilings. Epoxy on Floor determined by chip sampling.

Background (Gross)

Instrument #	1	2
Gamma (Ceilings)	N/A	395
Gamma (Floors)	7586	N/A
Gamma (Block Walls)	N/A	912
Gamma (Solid Walls)	N/A	912

Background (cpm)

Instrument #	1	2
Gamma (Ceilings)	N/A	79
Gamma (Floors)	1517.2	N/A
Gamma (Block Walls)	N/A	182.4
Gamma (Metal Walls)	N/A	182.4

Efficiencies (cpm/dpm)

Instrument #	1	2
Thin/No Paint	0.081	0.086
Epoxy	0.065	0.070
Other	0.077	0.083

Coatings	Thickness (inches)
Thin/No Paint	0.007
Epoxy	0.250
Other	0.06

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Total Activity Estimates Using Sodium Iodide Instruments

Survey Area:	2nd Floor	Survey Unit:	776031	Survey Date(s):	11/11/04

Sample Location #	RCT ID #	Instrument #	Gross Counts	Critical Level (dpm/cm2)	Total Alpha (dpm/cm2)
1	2	2	1301	7,394	40,939
2	2	2	1,506	7,394	62,513
3	2	2	345	4,866	4,866
4	2	2	1400	7,394	51,357
5	2	2	1246	7,394	35,150
6	1	1	24784	3,261	276,825
7	1	1	9,912	3,261	37,440
8	1	1	9,409	3,261	29,344
9	1	1	9,374	3,261	28,780
10	1	1	9,095	3,261	24,289
11	2	2	1043	7,394	13,787
12	1	1	9605	3,261	32,499
13	1	1	9,479	3,261	30,470
14	2	2	1364	7,394	47,569
15	1	1	9107	3,261	24,483
16	1	1	11,447	3,261	62,148
17	2	2	1198	7,394	30,099
18	2	2	490	4,866	9,998
19	2	2	503	4,866	11,366
20	2	2	411	4,866	4,866
21	2	2	499	4,866	10,945
22	2	2	438	4,866	4,866
23	2	2	381	4,866	4,866
24	2	2	441	4,866	4,866
25	2	2	1279	7,394	38,623
26	1	1	9527	3,261	31,243
27	2	2	280	7,394	7,394
28	2	2	987	7,394	7,893
29	2	2	1262	4,866	91,244
30	2	2	462	4,866	7,051

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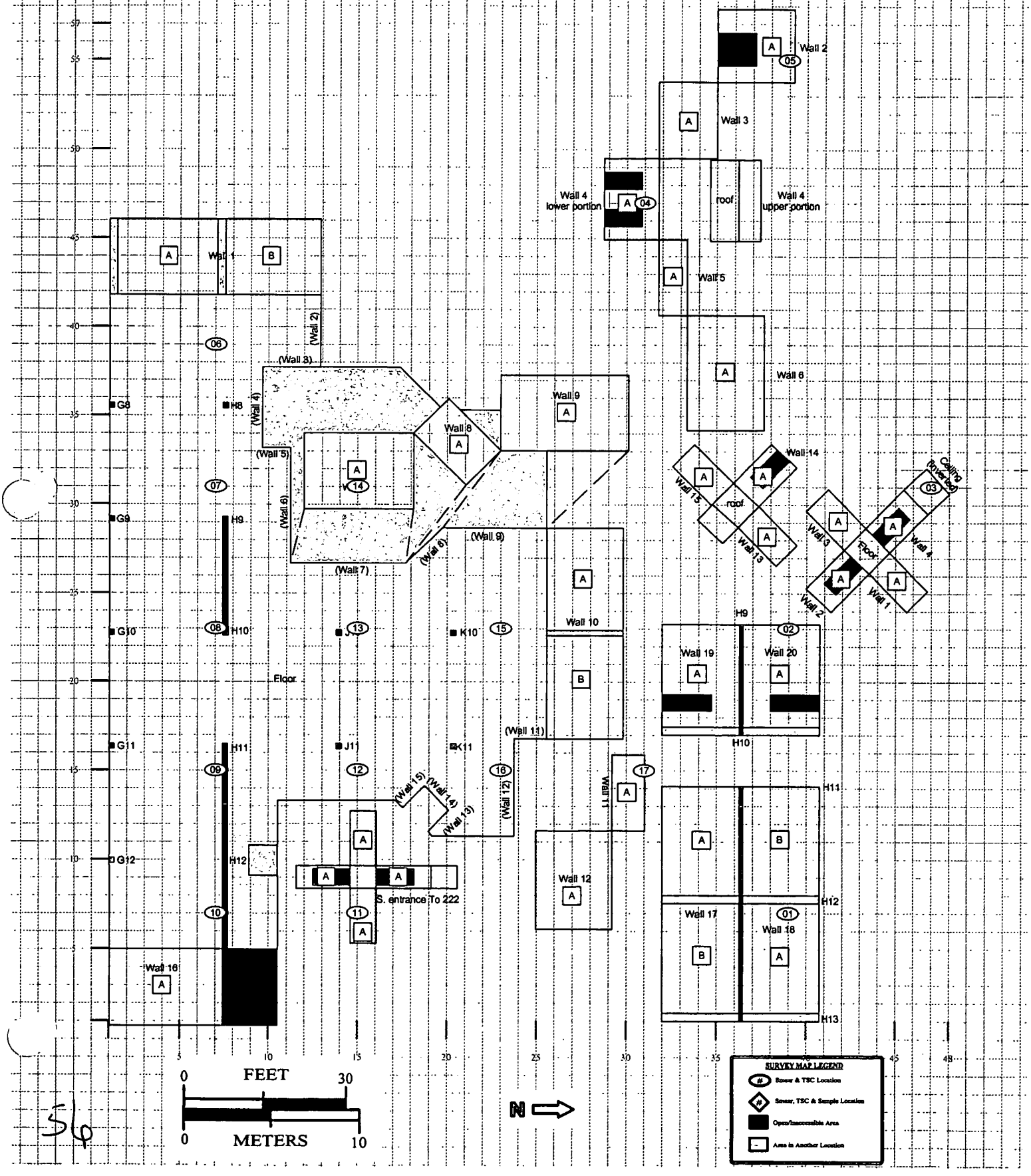
RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

Survey Area: Second floor **Survey Unit: 776031** **Classification: NA**
Building: 776
Survey Unit Description: Second floor- south and east of plenum S-5

Total Floor Area: 710 sq. m **Total Area: 2169 sq. m** **Random Start Grid Size: 8 x 8 sq. m**

SURVEY UNIT 776031 - MAP 1 OF 2



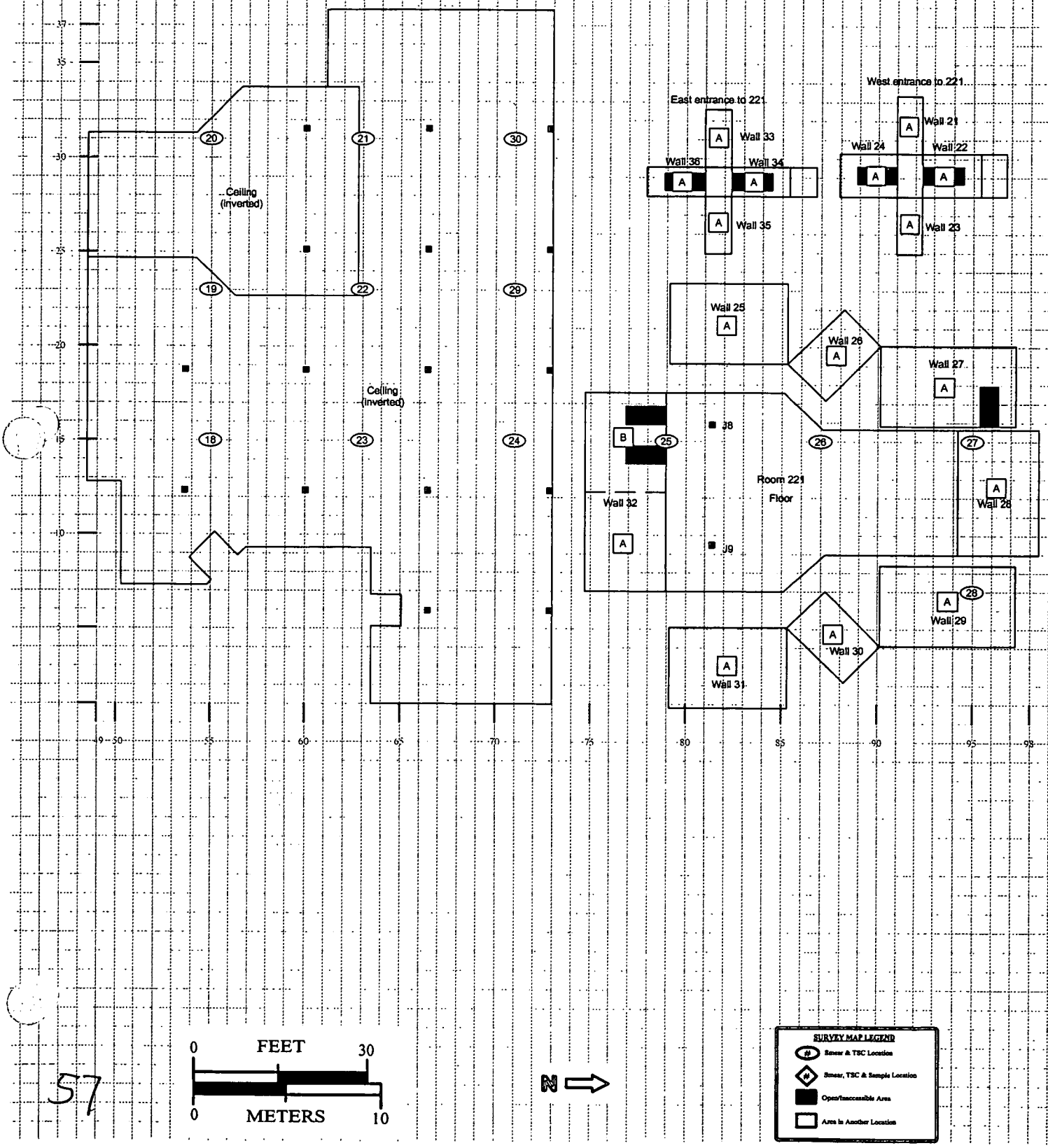
56

RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

Survey Area: Second floor **Survey Unit: 707031** **Classification: NA**
Building: 776
Survey Unit Description: Second floor- south and east of plenum S-5

Total Floor Area: 710 sq. m **Total Area: 2169 sq. m** **Random Start Grid Size: 8 x 8 sq. m**

SURVEY UNIT 776031 - MAP 2 OF 2

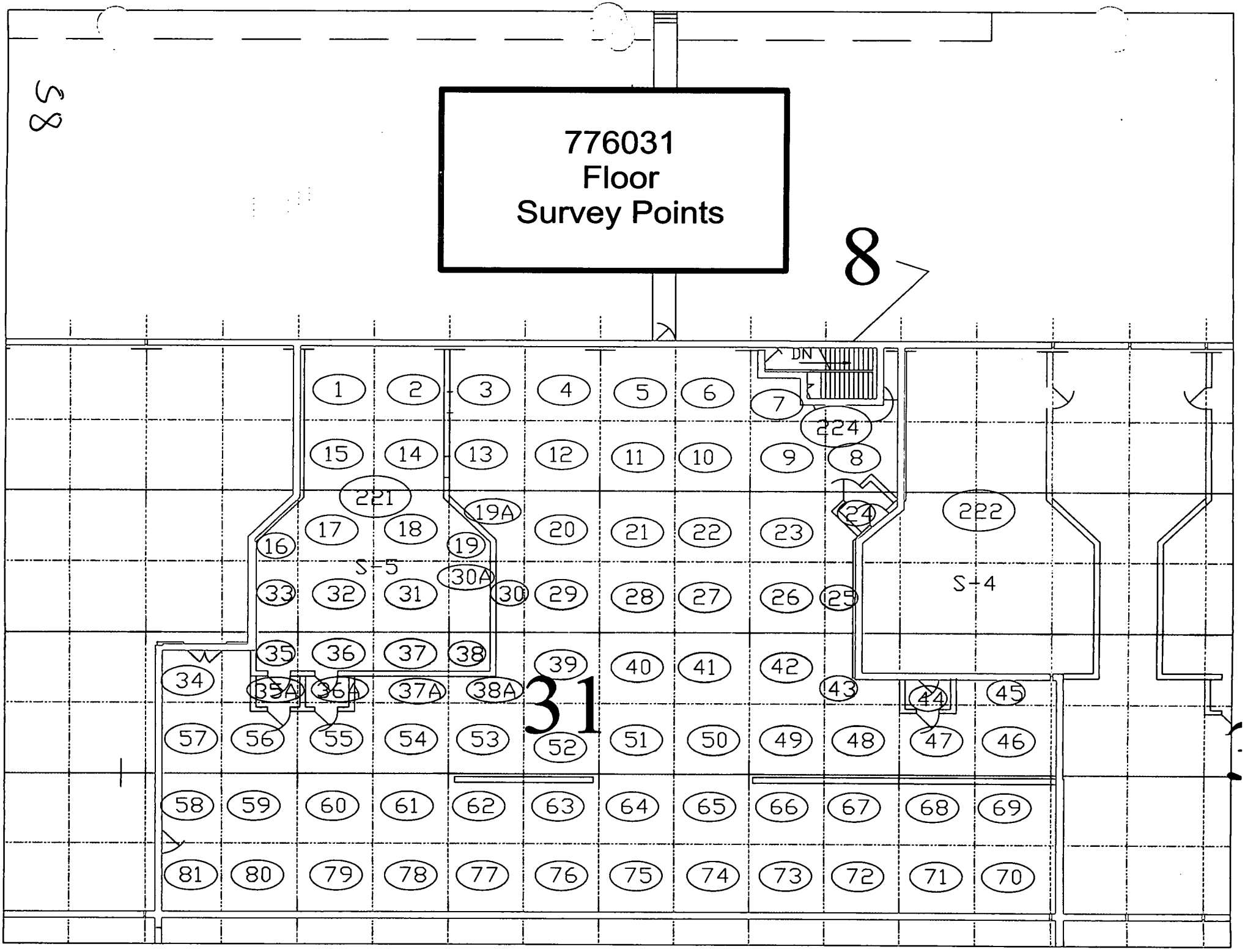


0 FEET 30
0 METERS 10

N

SURVEY MAP LEGEND
- Smear & TSC Location
- Smear, TSC & Sample Location
- Open/Inaccessible Area
- Area in Another Location

57


S8
776031
Floor
Survey Points
8
DN
1
2
3
4
5
6
7
224
15
14
13
12
11
10
9
8
221
19A
24
222
17
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Ceiling
Survey Points